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U.S. NUCLEAR WEAPONS IN EUROPE:

THE CURRENT ENVIRONMENT
AND
PROSPECTS FOR THE FUTURE

by

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The United States and NATO are on the verge of major new policy debates regarding nuclear weapons in Europe, yet increasingly, U.S. and some NATO European policy makers find it difficult to articulate persuasive rationales for maintaining these weapons in place. The current NATO nuclear posture may not be indefinitely sustainable. Alliance members should therefore pursue a focused effort to build an informed NATO consensus and to educate the public—prior to potentially acrimonious policy debates. In this manner, the Alliance will define the future of its weapons posture based on its own security requirements, not on reactions to moves made by other actors seeking to capitalize on the reluctance of many allied officials to address nuclear issues publicly.

In addressing these issues, the first part of this thesis analyzes the principal threats to which U.S. nuclear weapons in Europe are relevant—Russian nuclear capabilities and the proliferation of weapons of mass destruction (WMD)—as well as perceptions regarding nuclear weapons issues in major West European countries. The second part develops four scenarios and evaluates their political and military implications: (1) the nuclear status quo; (2) a unilateral withdrawal of U.S. nuclear weapons from Europe; (3) the formulation of a Western European Nuclear Identity (WNI); and, (4) an Air-Delivered Nuclear Forces (ANF) regime.

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ABSTRACT

The United States and NATO are on the verge of major new policy debates regarding nuclear weapons in Europe, yet increasingly, U.S. and some NATO European policy makers find it difficult to articulate persuasive rationales for maintaining these weapons in place. The current NATO nuclear posture may not be indefinitely sustainable. Alliance members should therefore pursue a focused effort to build an informed NATO consensus and to educate the public—prior to potentially acrimonious policy debates. In this manner, the Alliance will define the future of its weapons posture based on its own security requirements, not on reactions to moves made by other actors seeking to capitalize on the reluctance of many allied officials to address nuclear issues publicly.

In addressing these issues, the first part of this thesis analyzes the principal threats to which U.S. nuclear weapons in Europe are relevant—Russian nuclear capabilities and the proliferation of weapons of mass destruction (WMD)—as well as perceptions regarding nuclear weapons issues in major West European countries. The second part develops four scenarios and evaluates their political and military implications: (1) the nuclear status quo; (2) a unilateral withdrawal of U.S. nuclear weapons from Europe; (3) the formulation of a Western European Nuclear Identity (WNI); and, (4) an Air-Delivered Nuclear Forces (ANF) regime.

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LIST OF ACRONYMS AND/OR ABBREVIATIONS

ACDA	Arms Control and Disarmament Agency
ALCM	Air-Launched Cruise Missile
ANF	Air-Delivered Nuclear Forces (regime)
ASMP	Air-Sol Moyenne Portée
CEP	Circular Error Probable
CINCEUR	Commander-in-Chief Europe
CIA	Central Intelligence Agency
CTBT	Comprehensive Test Ban Treaty
CTR	Cooperative Threat Reduction
DCA	Dual Capable Aircraft
DOE	Department of Energy
DPC	Defense Planning Committee
EU	European Union
FOTL	Follow-on to Lance
GAO	Government Accounting Office
GLCM	Ground Launched Cruise Missile
GUMO	Main Directorate of the Ministry of Defense
HEU	Highly Enriched Uranium
HLG	High-Level Group
IAEA	International Atomic Energy Agency
ICBM	Intercontinental Ballistic Missile
IGC	Intergovernmental Conference
INF	Intermediate Nuclear Forces (treaty)
IRBM	Intermediate Range Ballistic Missile
LRA	Long Range Aviation (forces)
MC 14/3	Military Committee 14/3 (the doctrine of Flexible Response)
MLF	Multilateral Force
MINATOM	Ministry of Atomic Energy
MRBM	Medium Range Ballistic Missile
NAC	North Atlantic Council
NATO	North Atlantic Treaty Organization (also known as the Atlantic Alliance)
NFU	No-First Use
NPG	Nuclear Policy Group
NPR	Nuclear Posture Review
NPT	Non-Proliferation Treaty
NSNF	Non-Strategic Nuclear Forces
NTM	National Technical Means
NWFZ	Nuclear Weapons Free Zone
PAL	Permissive Action Link
SALT	Strategic Arms Limitation Talks
SEAD	Suppression of Enemy Air Defenses
SLBM	Submarine Launched Ballistic Missile
SLWPG	Senior Level Weapons Protection Group
SSBN	Ballistic Missile Submarine
SSMP	Scientific Stockpile Management Program

START	Strategic Arms Reduction Talks
STRATCOM	Strategic Command
TLAM-N	Tomahawk Land Attack Missile - Nuclear
TNF	Theater Nuclear Forces
WAND	Wide-Area Nuclear Detector
WEU	Western European Union
WMD	Weapons of Mass Destruction
WNI	Western European Nuclear Identity
WS^3	Weapons Storage and Security Systems

EXECUTIVE SUMMARY

Introduction. The United States and Europe are at a crossroads. Despite the apparent reduction in East-West tensions brought by the collapse of the Soviet empire, the strategic calculus of NATO and the former Warsaw Pact countries remains unclear. While many experts believe that the East-West stalemate and its nuclear weapons helped to prevent an armed conflict between NATO and the Warsaw Pact, most U.S. nuclear weapons deployed in Europe during the Cold War have been withdrawn. As a result of President Bush's 1991 decisions taken in consultation with NATO Allies, Dual Capable Aircraft (DCA) and associated nuclear gravity bombs comprise the remaining U.S. non-strategic nuclear forces (NSNF) in Europe. The United States Air Force is the sole remaining branch of the U.S. armed forces with custody of European-based nuclear weapons.

In 1992 Les Aspin, then Chairman of the House Armed Services Committee, suggested the possibility of withdrawing and later eliminating the remaining air-delivered tactical nuclear weapons in Europe. A series of government reports and unofficial studies followed, addressing and sometimes questioning the enduring value of stationing U.S. nuclear weapons abroad. Although no steps to implement Aspin's original suggestion have been taken, questions remain regarding the future of U.S. nuclear weapons in Europe.

This study examines the following questions: *What are the future prospects for U.S. nuclear weapons deployed in NATO Europe? Specifically, what are plausible policy options involving these U.S. nuclear forces? To the extent that the current posture is considered essential for the credibility of U.S. extended deterrence in Europe, what effects could changes in the current posture have on Eurasian stability?*

Structure: In order to address these questions, this work is divided into two major parts. With due attention to nuclear issues, Part I presents a review and analysis of the current security environment in Eurasia. Specifically, it examines the Russian nuclear weapons posture, the threat of proliferation of weapons of mass destruction (WMD) in the Atlantic and Eurasian region, and the nuclear perceptions of several key European NATO members. Part II develops and evaluates four scenarios for the future of U.S. nuclear forces in Europe: (1) the continuation of the Nuclear Status Quo, (2) a Unilateral Withdrawal, (3) the emergence of a Western European Nuclear

Identity, and (4) an Air-Delivered Nuclear Forces Regime (ANF). The study does not recommend a single, best solution for the questions regarding the future of U.S. nuclear weapons in Europe. Instead, it analyzes each scenario independently, presenting policy makers with a range of options and evaluating their politico-military implications and consequences. However, the framework for analysis provided in this thesis and used to evaluate each of these alternatives is designed to be beneficial to decision makers regardless of their policy preference for the future.

Key Findings: The major findings of this work may be summarized as follows:

- Because of the risk of premature nuclear weapons release by Russian commanders during times of tension and the risk of theft or sabotage against Russian tactical nuclear weapons by terrorists or others, Russian tactical nuclear weapons still pose a threat to NATO and the United States. Furthermore, the risk of NATO-Russia confrontations with nuclear dimensions cannot be excluded.

- NATO's current nuclear posture is supported by many officials in the major NATO European countries. However, NATO's nuclear weapons no longer command the same degree of public and official support that they did during the Cold War.

- Alliance nuclear weapons do not seem to deter the *acquisition* of weapons of mass destruction by states with interests inimical to the United States and NATO. NATO's nuclear weapons could nonetheless play a role in deterring WMD *employment* by enemy states or actors. However, it is impossible to prove conclusively that these weapons adequately fulfill either role.

- The ANF regime outlined in Scenario #4 would use arms control and transparency measures to increase security and stability in the Eurasian area. It would canton, reduce, and eliminate U.S., Russian, and ultimately, French air-delivered nuclear weapons—that is, it would limit, reduce, and destroy *not delivery systems but actual warheads*. A potential ANF regime would face substantial, but not necessarily insurmountable, obstacles.

Policy Implications: As a consequence of the end of the Cold War and efforts to build new political relationships with former adversaries, while undertaking new security functions (such as peacekeeping and crisis management), the Alliance's primary function—that of collective defense—is being de-emphasized. NATO's nuclear weapons are increasingly portrayed as serving *tous azimuts* functions, and their enduring relevance is not as clear as during the Cold War.

Instead of emphasizing the Article 5 commitment in the North Atlantic Treaty[1], NATO is moving toward a strategy of selective engagement, whereby Alliance members will opt in or out of future operations (e.g., peacekeeping and humanitarian relief) based on their own national interests. In some ways this may seem inevitable as the Alliance adapts to the new international environment. However, as one NATO official has asked, "if collective defense is relativized, what role will nuclear weapons play in the future?"

This study argues that the United States and its NATO Allies are on the verge of major new policy debates regarding nuclear weapons issues in Europe. If the eventual result of these debates involves a withdrawal of the remaining U.S. nuclear weapons from Europe, vigorous Alliance deliberations with active U.S. participation would improve the chance that such a withdrawal would occur in a manner consistent with Alliance interests. As the Eurasian environment evolves, a withdrawal of the remaining U.S. nuclear weapons in Europe cannot be excluded.

Regardless of the future direction that policy makers choose, the current NATO nuclear posture is not indefinitely sustainable. The nuclear calculus in the European security equation is changing, and NATO decision makers must prepare to meet these changes[2] "head-on." New nuclear debates appear imminent. Alliance members should therefore pursue a focused effort to establish an internal NATO consensus and to educate the public—prior to the enlargement debate or any other nuclear-related initiatives. In this manner, the Alliance will define the future of its weapons posture based on its own security requirements, not on reactions to moves made by other actors seeking to capitalize on the reluctance of many allied officials to address nuclear issues publicly.

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[1] Article 5 of the North Atlantic Treaty, signed on 4 April 1949 in Washington D.C., states the following: "The Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all; and consequently they agree that, if such an armed attack occurs, each of them...will assist the Party or Parties so attacked by taking forthwith, individually and in concert with the other Parties, such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area." Please see the NATO Handbook, NATO Office of Information and Press, Brussels, 1995, p. 232.

[2] For example, NATO enlargement, issues surrounding the Scientific Stockpile Management Program, no-first use advocacies, and initiatives for nuclear weapons free zones.

I. INTRODUCTION

The United States and Europe are at a crossroads. Despite the apparent reduction in East-West tensions brought by the collapse of the Soviet empire, the strategic calculus of NATO and the former Warsaw Pact countries remains unclear. While many experts believe that the East-West stalemate and its nuclear weapons helped to prevent an armed conflict between NATO and the Warsaw Pact, most U.S. nuclear weapons deployed in Europe during the Cold War have been withdrawn. As a result of President Bush's 1991 decision taken in consultation with NATO allies, Dual Capable Aircraft (DCA) and associated nuclear gravity bombs comprise the remaining U.S. non-strategic nuclear forces (NSNF) in Europe. The United States Air Force is the sole remaining branch of the U.S. armed forces with custody of European-based nuclear weapons.

In 1992 Les Aspin, then Chairman of the House Armed Services Committee, suggested the possibility of withdrawing and later eliminating the remaining air-delivered tactical nuclear weapons in Europe. A series of government reports and unofficial studies followed, addressing and sometimes questioning the enduring value of stationing U.S. nuclear weapons abroad. Although no steps to implement Aspin's original suggestion have been taken, questions remain regarding the future of U.S. nuclear weapons in Europe. Due to increasing operational and fiscal constraints, some U.S. Air Force officials have begun to at least explore the possibility of removing the remaining U.S. nuclear weapons from Europe. The Air Force officials that have expressed interest in this process hold that even the current reduced level of forces and readiness presents an unacceptably high set of "opportunity costs" to those USAF DCA units tasked with preparedness for the delivery of nuclear weapons. Without these nuclear taskings, they argue, such units would be able to dedicate more time and effort to preparing for and executing conventional, "real-world" missions. It should be noted, however, that official USAF policy clearly falls in line with the rest of the Executive branch in maintaining the enduring value and benefit derived from the continued presence of U.S. nuclear assets in Europe.

This thesis examines the following questions: *What are the future prospects for U.S. nuclear weapons deployed in NATO Europe? Specifically, what are plausible policy options involving these U.S. nuclear forces? To the extent that the current posture is considered essential for the credibility of extended deterrence in Europe, what effects could changes in the current posture have on Eurasian stability?*

A. METHODOLOGY

In addressing these questions, this work is divided into two major parts (see Figure 1.1). U.S. nuclear weapons deployed in Europe represent one element in a multi-national security structure which is increasingly being challenged by a wide range of security issues. As such, the Alliance's nuclear weapons do not exist in isolation—their present and future utility must be analyzed in terms of the purpose of the Alliance and the threats they are arrayed against. Part I, therefore, looks at U.S. nuclear weapons in Europe in terms of the current and foreseeable Eurasian security environment. First, the two principal WMD threats to NATO are analyzed: (1) Russian tactical nuclear weapons[1] and their associated infrastructure, doctrine, and posture, and (2) the threat of proliferation and employment of Weapons of Mass Destruction on NATO's periphery. Second, the nuclear perceptions of key Atlantic Alliance members in Western Europe and on the southern flank are evaluated.

Part II moves beyond the current environment by presenting four major policy options and evaluating their implications for the future of U.S. nuclear weapons in Europe. Scenario #1, the Status Quo, keeps the present force posture in place, and assumes that a continued U.S. nuclear weapons presence in Europe is desirable. The scenario allows for minor, evolutionary changes in the U.S. nuclear posture, taking into account issues such as weapons stewardship, warhead security, or interregional deployment planning. It does not envision weapons

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[1] It should be noted from the outset that the focus here is on Russian *tactical* nuclear weapons. For the purpose of this research, *tactical* nuclear weapons are defined as all nuclear weapons not covered by the Intermediate Nuclear Force (INF) treaty and the intercontinental ballistic missile (ICBM) and submarine-launched ballistic missile (SLBM) portions of the Strategic Arms Reduction Talks (START). As Lawrence Freedman has written, "terminology in this area is notoriously difficult. As it became clear that the notion of a *tactical* nuclear weapon was intellectually suspect, the term *theater* nuclear force was adopted, which classified the weapons by location rather than role. It was then necessary to distinguish between the longer-range theater systems that would be used against targets well to the rear of the battlefield and the shorter-range intended for battlefield use. However, many Europeans noted that in all these cases, the comparisons were still being made with intercontinental *strategic* weapons, which implied that the use of weapons of similar yield against any allies of the two larger [Cold War] powers would be something less than 'strategic.'" In addition, many of the theater nuclear forces (TNF) were in fact capable of yields similar to some of those on strategic systems, and in the case of air-delivered weapons such as gravity bombs and cruise-missiles, were deliverable over ranges of thousands of miles. This is still the case today, and even though Russian officials claim that all *tactical* nuclear weapons have been withdrawn to the territory of the Russian Federation, Russian Long Range Aviation (LRA) forces are still capable of striking deep into Western Europe with Tu-95 MS6/16 Bear bombers flying from bases east of the Urals carrying these types of *tactical* weapons. Thus the terminology leads to confusion as to the true capabilities and doctrine behind these weapons. As defined above, the term *tactical* nuclear weapons in this study covers the following nuclear weapons classes: all air-delivered nuclear weapons and all land- and sea-based nuclear weapons not limited by the INF and START treaties. For further discussion, please see Lawrence Freedman, "The First Two Generations of Nuclear Strategists," in Makers of Modern Strategy, Peter Paret ed. Princeton: Princeton University Press, 1986, pp. 748-49.

modernization or the introduction of major new delivery systems. As such, Scenario #1 focuses on potential problems that could undermine the force posture in place today.

Scenario #2 posits the circumstances that could lead to a Unilateral Withdrawal of U.S. nuclear weapons from Europe. It assumes that a significant change in public opinion regarding the continued need to deploy NSNFs in Europe or safety concerns about these weapons may prove too difficult to overcome, and, consequently, may result in their withdrawal. An event such as a nuclear accident (involving either military or civilian nuclear applications), a security breach at a nuclear weapons facility, or the employment of a nuclear weapon by either state or non-state actors, perhaps in a conflict distant from Europe, could lead to such an outcome. Furthermore, this scenario explores alternative postures and political arrangements that might allow U.S. nuclear guarantees to remain credible even after a withdrawal of U.S. nuclear weapons from Europe.

Scenario #3 assumes that any alternative postures developed above are not credible, and that this would provide the motivation for the development of a multi-national Western European Nuclear Force. Most experts agree that barring the removal of U.S. nuclear weapons from Europe, the likelihood of such a multinational nuclear entity is quite slim. This work seeks to move beyond this point-of-view by starting with the assumption that a Western European Nuclear Force would be "forced" rather than "eased" into existence, due to the unilateral withdrawal of U.S. weapons, the lack of credibility in subsequent replacement guarantees, and the perceived threats to Western European security. This scenario explores the possible participants in and force structures for such a nuclear force.

Finally, Scenario #4 assumes that post-Cold War changes to the Eurasian security system have modified the requirements for nuclear deterrence in the European context (i.e., deterrence vis-à-vis the remaining Russian nuclear threats as well as new WMD threats). In this regard, it explores a global arms control regime involving air-delivered nuclear weapons. Current Russian nuclear doctrine emphasizes the military (operational war-fighting) and political utility of NSNFs. Additionally, while NSNFs clearly possess offensive and strategic capabilities, air-delivered forms of these weapons are not covered under any arms control regime, formal or tacit. NATO as a whole would welcome credible and verifiable reductions in Russia's NSNFs, and this scenario examines a global Air-Delivered Nuclear Forces regime which would eventually obligate the Russian Federation, the United States, and France to withdraw and destroy all remaining air-delivered nuclear *weapons* and *warheads*.

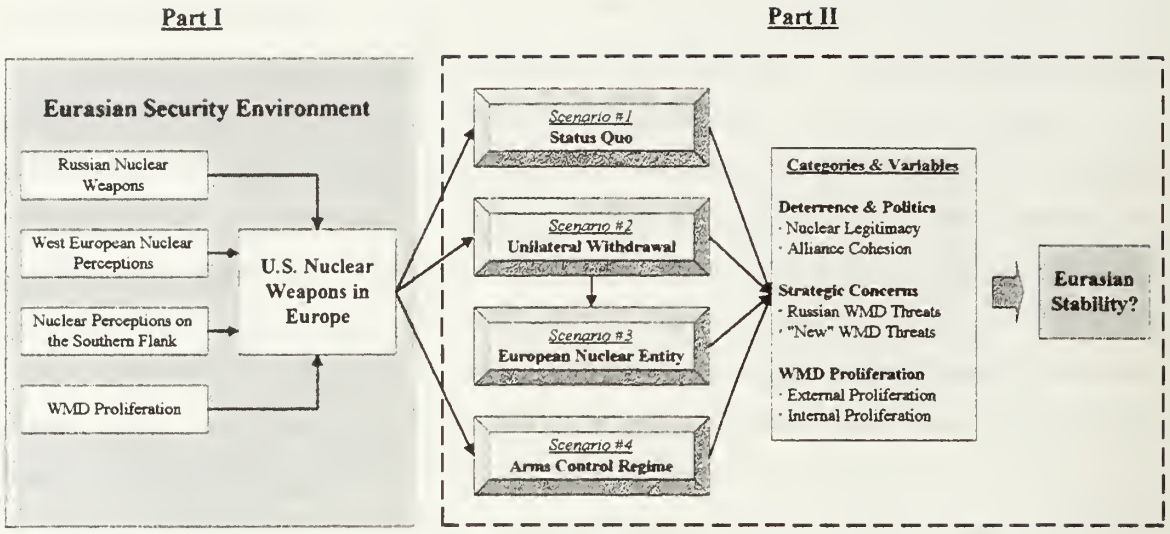

Figure 1.1 Structural Overview

The potential withdrawal of U.S. nuclear forces from Europe raises critical questions with regard to Eurasian stability, U.S. security guarantees, and NATO nuclear policy. In order to adequately address these questions, build the scenarios, and evaluate their potential political and military effects on Eurasian stability, the four options are presented with the same structure:

- Assumptions: Presents the concepts and assumptions that are necessary to build and develop each scenario.
- Intervening Developments or Initiatives: Describes the scenario in detail, providing the specific structural and policy information necessary to fully develop the scenario.
- Characteristics: Describes the force posture and policy mechanisms in effect under each scenario.
- Analysis: Evaluates each scenario and its impact on Eurasian stability based on six specific variables.

Each scenario is analyzed in terms of its effect on six different variables. The variables fall into three categories (Deterrence & Politics, Strategic Concerns, and WMD Proliferation) and are chosen to measure the impact that each scenario might have on Eurasian stability (see Figure 1.2).

Figure 1.2 Categories and Variables

Deterrence & Politics. In addressing the larger issues of nuclear deterrence and NATO's political mechanisms, *nuclear legitimacy* is defined as the degree of international acceptance of NATO nuclear decisions and the Alliance's nuclear deterrent posture. Although NATO's nuclear posture was never publicly validated by non-NATO governments, the Alliance's nuclear forces were nonetheless accorded a degree of international "acceptance" during the Cold War. The Alliance's weapons presence, declaratory doctrine, and public policy statements contributed to this "acceptance." The United States, in extending its deterrent coverage to NATO Europe and providing in-place nuclear forces as a coupling mechanism, underscored the validity of the Alliance nuclear stance. Moreover, the fact that a 16-member, multi-national alliance stood behind such decisions as the 1967 Flexible Response doctrine (MC 14/3), helped to add credibility to NATO's deterrent posture. If the present nuclear posture is changed, there could be an appreciable effect on NATO's *nuclear legitimacy*, especially if such a change resulted in fewer Alliance members participating in NATO's nuclear policies.

In addition to the impact on general deterrence, a change in the Alliance's nuclear posture is also likely to carry internal political ramifications. The variable *alliance cohesion* is defined as the level of shared confidence in Alliance nuclear consultation and cooperation arrangements. Since the first deployment of U.S. nuclear weapons to Europe during the Berlin Crisis of 1949, NATO has developed the political consultative arrangements necessary to both articulate a cohesive nuclear doctrine and to provide an internal forum for nuclear policy issues. The establishment of the Nuclear Planning Group (NPG) in 1967, and the nuclear issues discussed

within the High Level Group (HLG) and the Military Committee (MC) provided a framework for all Alliance members (except France) to participate in Alliance nuclear decision making. Thus, many observers have reflected that nuclear weapons have historically acted as the "glue that binds the alliance together." A change in the Alliance's nuclear posture will ultimately affect *alliance cohesion* and may directly impact NATO's nuclear cooperation as well as risk- and responsibility-sharing.

Strategic Concerns. Moving beyond the wider deterrent and political context, the next category addresses strategic security concerns. Although there are a host of security threats to NATO in the post-Cold War world, this work specifically addresses the threat to which NATO's nuclear weapons would most likely respond—WMD employment against NATO. The *Russian WMD threat* is defined as the likelihood of either Russian political (verbal) WMD threats or of actual Russian employment of WMD against the Atlantic Alliance. Most observers would agree that the U.S. nuclear weapons presence in Europe served to remind the Soviet Union of enduring U.S. interests in the security of its Alliance partners. The Russian Federation, although unlikely to directly threaten the West in the near term, must nonetheless view U.S. nuclear weapons in Europe as representing ongoing U.S. security interest in the region. To the extent that Russia took these weapons seriously in the past, a change to this posture may alter Russian perceptions and increase Russian leverage or *Russian WMD threats* in the Eurasian region.

A second strategic concern, *"new" or "non-Russian" WMD threats*, is defined as the likelihood of WMD threats (verbal or operational) against NATO countries, including the United States. This variable assumes that proliferation has already occurred, and that WMD are in the hands of state or non-state actors with interests inimical to the Atlantic Alliance. The variable is more difficult to operationalize, since the relationship between NATO and a potential proliferant is less clear than it was between NATO and the Eastern Bloc during the Cold War. Increasingly, the awareness of asymmetries of interest and determination between Alliance members and potential proliferants is clouding the calculus of deterrence. Thus, for example, a proliferant might be able to coerce the United States to back away from its nuclear security guarantees, even if the U.S. possesses overwhelming nuclear superiority. The dynamics of such a dilemma are largely situational. Nonetheless, the presence of U.S. nuclear weapons in Europe is likely to have some effect on potential proliferants, and a change to this presence could affect the likelihood of *proliferant WMD threats*.

WMD Proliferation. The final category addresses one of the largest security challenges of the post-Cold War world, the proliferation of weapons of mass destruction. The variable *external*

proliferation is defined as the likelihood of WMD proliferation external to the Atlantic Alliance. It assumes that there are state or non-state actors that have not yet acquired WMD but are seeking to do so. Generally speaking, the presence of U.S. nuclear weapons in Europe is not likely to deter the proliferation of weapons of mass destruction (please refer to Chapter II of this work for a detailed discussion regarding proliferation). In fact, their presence may provoke states on NATO's periphery to attempt to gain access to what may be perceived as "weapons of coercion" or the "tools of power" of the Western world. Again, the likelihood of proliferation is highly situational and is probably also influenced by other factors, such as local security concerns and regional power struggles. Nevertheless, the impact that a posture change in NATO's nuclear forces would have on *external proliferation* cannot be ignored.

The second variable in this category, *internal proliferation*, is defined as the likelihood of WMD proliferation within the Atlantic Alliance. Although all 16 NATO countries are signatories to the Non-Proliferation Treaty, there are likely to be enduring security questions if NATO's nuclear posture is changed or if U.S. nuclear weapons are withdrawn from Europe. For example, some German observers argue that the Federal Republic signed the NPT only after a long, internal debate and under the "condition" that the United States maintain a nuclear umbrella protecting Western Europe. Furthermore, while Germany has been described as a "virtual" nuclear power without the present will acquire nuclear weapons, Turkey, on the other hand, faces a potentially thorny security equation and is seen by some observers as a likely candidate to "go nuclear" if it believes its nuclear security requirements are not being met by the Alliance. Thus *internal proliferation* may become a primary concern if NATO's nuclear posture is changed.

B. SUMMARY

As the Cold War drew to a close and the Soviet Union collapsed, the NATO heads of state met in London in July 1990 to assess the new security situation. The subsequent 1990 London Declaration reaffirmed the value of a nuclear deterrent posture to NATO: "Nuclear weapons will continue to fulfill an essential role in the overall strategy of the Alliance to prevent war by ensuring that there are no circumstances in which nuclear retaliation in response to military action might be discounted."[2] While most Western observers continue to affirm the value of nuclear weapons in general terms (i.e., for the prevention of war between the major powers), questions are being raised regarding the necessity of a U.S. nuclear weapons presence in Europe.

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[2] United States. Department of State. "NATO Transformed: The London Declaration." Sel. Doc. No. 38. Washington, D.C.: Bureau of Public Affairs, 1990, p. 3.

In the following chapters, this work analyzes the current Eurasian security environment, especially as it relates to the current U.S. nuclear weapons presence in NATO Europe. The subsequent scenarios outline four different options for policy makers in determining a future course of action regarding these weapons. This work does not seek to promote one particular option—instead, it develops, explores, and evaluates each scenario and offers them as potential courses of action, each with its inherent strengths and weaknesses.

II. PRINCIPAL THREATS TO NATO: RUSSIAN NUCLEAR WEAPONS AND WMD PROLIFERATION

A. INTRODUCTION

As the Atlantic Alliance confronts an uncertain post-Cold War security environment, it will be confronted with at least two major threats from weapons of mass destruction: (1) the Russian Federation and its vast nuclear stockpile, and (2) threats posed by the proliferation and potential employment of weapons of mass destruction by states on NATO's periphery.

NATO's Strategic Concept points out that Russian "military capability and build-up potential, including its nuclear dimension, still constitutes the most significant factor of which the Alliance has to take account in maintaining the strategic balance in Europe."[1] There are substantial concerns regarding Russian tactical nuclear weapons, in particular relating to their security and control mechanisms. Recent reports have "warned that safeguards to prevent the launch of nuclear weapons by rogue Russian officers are ineffective."[2] According to a 1996 CIA report, blocking devices that prohibit an unauthorized nuclear weapons release are likely to fail—"all technical security measures can be circumvented—probably within weeks or days depending on the weapons involved."[3] The potential for either a deliberately planned or an unauthorized, "rogue" Russian nuclear weapons release is a serious concern for NATO and demands further study.

The second WMD threat to NATO stems from the proliferation and potential employment of nuclear, chemical, or biological weapons by periphery states with interests inimical to NATO and its member countries. Due to the military and political complexities related to deterring potential proliferants, the Atlantic Alliance has found it challenging to craft a coherent policy to deal with these threats. Although there are several internal groups addressing the problem (e.g., the Senior Politico-Military Group on Proliferation and the Senior Defense Group on Proliferation), challenging political and military questions remain.

Both Russian nuclear weapons and WMD proliferation are likely to be security concerns to the Alliance for the foreseeable future. Furthermore, NATO's nuclear weapons posture might

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[1] The Strategic Concept in the NATO Handbook, NATO office of Information and Press, Brussels, 1995, p. 238.
[2] James Adams, "US Fears Grow as Russia Loses Nuclear Grip." The Sunday Times, WEB Edition, October 27, 1996.
[3] Ibid.

play a role in countering both threats. Addressing the future of U.S. nuclear weapons in Europe, therefore, requires an analysis of both of these primary threats to NATO's security.

B. RUSSIAN TACTICAL NUCLEAR WEAPONS: INFRASTRUCTURE, DOCTRINE, AND POSTURE

1. General Russian Nuclear Weapons Perspectives

Russian national security planners view their country as surrounded by significant risks in a political context of ambiguity and fluidity. Moscow therefore will continue to anchor its national security in nuclear weapons as the ultimate guarantee of Russia's survival. Russian military doctrine prescribes a strong role for nuclear deterrence and affirms its value in the world today. This "official position in support of Russia's maintaining its nuclear status is unlikely to change much with time, whatever the internal political shifts." Russia presently views itself as being in a transitional period and therefore must avoid "irrevocable marginalization in the world community."[4] Nuclear weapons help Russia avoid marginalization because they recall Russia's former superpower status and convey a much stronger "hands-off" message than conventional weapons do.

In order to bolster these perceptions, the Russians have officially renounced the 1982 Soviet no-first-use pledge. Although discarding a no-first-use policy is not an indication of any Russian desire or inclination to use nuclear weapons if war should come, it is not without significance:

> The change was widely discounted in Western commentary on the grounds that the earlier Soviet pledge had only been rhetorical. That was a serious misreading of what had been a significant Soviet strategic policy to keep any hostilities non-nuclear if at all possible. What has changed is not the desire to avoid nuclear war, but a Russian belief that its weakened strategic situation may no longer give the option of keeping a war non-nuclear, thus placing the burden for such a decision on the other side, and that deterrence requires making a pledge to resort, if necessary, to first use of nuclear weapons if conventional defense does not suffice.[5]

The Russian military has initiated a noteworthy path of reasoning within this regard. With the accuracy and potency of newer precision-guided munitions (PGMs) and the potential to conduct large scale, penetrating, and highly precise conventional strikes against an enemy before a

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[4] Konstantin Sorokin, "Russia after the Crisis: The Nuclear Strategy Debate." Orbis, Vol. 38, No. 1, Winter 1994, p. 25.

[5] Raymond L. Garthoff, "Russian Military Doctrine and Deployments." In State Building and Military Power in Russia and the New States of Eurasia. Bruce Parrott ed. New York: M.E. Sharpe, 1995, p. 58.

suitable response can be mobilized, there is, according to Russian reasoning, an emerging American potential to "emasculate" Russian land-based deterrence forces along with their command and control structures to the point where they would no longer be able to mount a sufficiently powerful retaliatory strike. This would be especially worrisome, according to Russian speculation, if forces were reduced to START II levels or below. This new interpretation of deterrence and crisis stability appeared during the formulation of the new military doctrine of October 1993. "Having appreciated the effects of high-precision weaponry employed in the Gulf War, the General Staff now views an attack on their strategic systems by conventional weaponry as a 'transition to the use of weapons of mass destruction,' i.e., it justifies a nuclear response."[6]

Some commentators have taken an even greater liberty in their discussions of nuclear deterrence. Pavel Felgengauer, a well-known defense analyst for the *Sevodnya Gazetia*, argues that

> as a nuclear power Russia will have to increasingly rely on its nuclear potential as its conventional forces degrade further. The war in Chechnya has amply demonstrated the Russian armed forces' vulnerability. If they suffer another defeat in a local conflict in the Caucasus or Central Asia, the political cost might prove totally unacceptable to Moscow, so much so that it might come up with a direct threat to employ nuclear weapons or even resort to a 'demonstrative' nuclear strike in order to achieve victory in a hopeless war....[7]

In further commentary with regard to recent events and his interaction with Russian defense officials, Felgengauer writes that

> In response, Moscow might decide that it had no choice but to launch a preemptive strike against the offensive forces being deployed by its adversary. High-ranking officials of the Russian Defense Ministry by no means rule out the possibility that in response to, say, the integration of Poland into NATO's military structure, Moscow might deploy hundreds of tactical nuclear warheads in Kaliningrad Province, targeting them on Polish military and strategic facilities needed to support the operations of mobile attack forces. *Delivery vehicles for tactical nuclear weapons are already in place, and special facilities for storing and maintaining warheads were built in the Soviet era and could be reused* [emphasis added].[8]

While this may be journalistic or political blustering, the implications of such statements deserve careful analysis. One can certainly arrive at the conclusion that the new Russian "doctrine

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[6] James Holcomb, "Russian Military Doctrine--Structuring for the Worst Case." Jane's Intelligence Review, Vol. 4, No. 12, December 1992, p. 533.

[7] Pavel Felgengauer, "Russian Army and Military Balance Between East and West." Segodnya. RUSSICA Information Inc.-RusData DiaLine-Russian Press Digest. Lexis-Nexis: August 18, 1994.

[8] Pavel Felgengauer, "Russian Generals Aren't Interested in NATO Country's Good Intentions." Sevodnya. The Current Digest of the Soviet Press-Current Digest of the Post-Soviet Press. Lexis-Nexis: July 19,1995.

indicates changing views on nuclear war and that conventional strikes on Russia's nuclear and other dangerous targets will elicit a nuclear response."[9]

2. Third or Fourth Generation Nuclear Weapons

Frequent mention of "third-generation" or "fourth-generation" nuclear weapons by the military theorists and general staff members implies that the Russians continue to value the role of nuclear weapons in terms of their war-fighting potential in addition to their mission as political weapons for strategic deterrence. "Like its Soviet predecessor, the Russian military views third-generation nuclear weapons as a critical component of the military-technical revolution. Colonel-General I. Rodionov has mentioned 'the possible appearance of third-generation nuclear weapons in the next few years.' V.N. Mikhaylov, the Russian Minister for Atomic Energy, has argued that third-generation nuclear weapons will be 'capable of destroying enemy strategic targets both in space and on earth' and may be usable 'in any conflict.'"[10] Russian third-generation weapons will "have a small fraction of the global contamination effects of today's warheads, but with the same destructive capability. They will be weapons with directional, selective emission of energy on a target. Development is now under way, and these weapons may well appear within ten years or so."[11] The implications for the development of a miniaturized, "usable", or "clean" nuclear weapon are considerable. Russian military and scientific experts have concentrated on the combat capabilities of "low- and high-yield miniaturized nuclear devices. Minister for Atomic Energy Mikhaylov has noted that, 'You can drop a couple of hundred little bombs on foreign territory, the enemy is devastated, but for the aggressor there are no consequences.' In late 1992, General-Lieutenant and academician Ye. A. Negin announced that Russia has already developed a mini-nuke whose yield has more than doubled and whose weight is one-hundredth of what it was. In the words of academician Khariton, it has 'many subtleties and much elegance.'"[12]

3. Russian Tactical Nuclear Weapons: Issues and Problems

During the Cold War, the Soviet Union widely deployed and dispersed its tactical nuclear weapons in order to guard against pre-emptive strikes and to ensure their survival in the event of hostilities. This operational philosophy was complemented by a high level of pre-delegation with respect to launch authority and local weapons control. In essence, the Soviet tactical nuclear

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[9] Mary FitzGerald, "Russia's New Military Doctrine." Naval War College Review, Vol. 46, No. 2, Spring 1993, p. 42.
[10] Mary FitzGerald, "The Russian Image of Future War." Comparative Strategy, Vol. 13, 1994, p. 173.
[11] Ibid., p. 173.
[12] Ibid., p. 177.

weapons posture reflected a nuclear-warfighting doctrine—the likelihood of their employment during war was quite high. Today these weapons remain as an integral part of the Russian arsenal, and the legacy of the Soviet employment doctrine remains in place. In the event of a crisis or hostilities, Russian tactical nuclear weapons are probably the least controlled elements of the Russian nuclear arsenal and the ones most likely to be employed. Furthermore, the security management of these weapons is substantially lacking when compared to NATO standards. Indeed, a recent CIA analysis entitled "Prospects for Unsanctioned Use of Russian Nuclear Weapons" reportedly concluded that the "Russian nuclear command and control system is being subjected to stresses it was not designed to withstand as a result of wrenching social change, economic hardship, and malaise within the armed forces."[13] Furthermore, the analysis concluded that Russian controls over tactical nuclear arms are poor and placed these weapons in the highest risk category for unsanctioned use or sabotage. It is widely recognized that the Russian nuclear weapons and fissile materials infrastructure has been under unprecedented stress since the collapse of the Soviet Union.[14] In this regard, the threat of proliferation or leakage from tactical nuclear weapons is particularly acute. Major General Belous, the head of the Military Policy Section of the Center for Scientific Research in Moscow, points out that "tactical nuclear weapons are especially vulnerable due to the fact that they are numerous, relatively compact, and widely distributed."[15]

In general, a modern and capable nuclear safeguard system consists of four basic and important elements. A physical protection program is designed to deter and repel the forcible intrusion into nuclear facilities. A material control and accountancy system is designed to protect nuclear weapons from removal by insiders as well as to monitor movement of warheads and control inventories. A human reliability program ensures that those personnel who have access to facilities are properly vetted and controlled. Finally, an integrated national system includes a centralized support system with regulatory oversight and a national computerized data base used for tracking purposes.[16] The Russian nuclear infrastructure suffers deficiencies in all of these

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[13] Bill Gertz, "Russian Renegades Pose Nuke Danger: CIA Says Arsenal Lacks Tight Controls." Washington Times, October 22, 1996, p. 1.

[14] For detailed analysis on the depth of this problem, see Graham Allison et al. Avoiding Nuclear Anarchy. CSIA Studies in International Security No. 12, Cambridge: The MIT Press, 1996, and The Nuclear Challenge in Russia and the New States of Eurasia, George Quester, ed. Armonk: M.E. Sharpe, 1995.

[15] See Vladimir Semenovich Belous, "Tactical Nuclear Weapons: A Half-Forgotten Reality." Segodnya, FBIS-TAC-95-014-L, 23 June 1995.

[16] For a thorough discussion of these issues, see Oleg Bukharin, "Nuclear Safeguards and Security in the Former Soviet Union." Survival, Vol. 36, No. 4, Winter 1994-95, p. 56.

categories. The threat of operational use, loss of control, or leakage of tactical nuclear weapons in Russia is multi-faceted and can be divided into five general areas:

a. Physical and technical security
b. The doctrine of pre-delegation
c. Nuclear dependency in the face of certain military contingencies
d. Stockpile consolidation and stewardship efforts
e. Personnel and internal security problems

a. Physical and Technical Security

When Russian tactical weapons are deployed, they are guarded by special units of the General Staff as well as the units of the armed forces that are responsible for the use of the weapons.[17] As the weapons are withdrawn from service or scheduled for maintenance, responsibility passes to the Twelfth Main Directorate of the Ministry of Defense (Main Administration of Nuclear Weapons), known as the 12th GUMO. This directorate assumes custody for transportation to maintenance facilities and storage at central weapons depots. During weapons dismantlement or refurbishment, the safeguards responsibility is transferred to MINATOM (the Russian agency created in 1992 and similar to the US Department of Energy). Normally tactical weapons are kept in specially designed storage depots separate from their delivery systems.[18] "The depots, usually underground bunkers, are located inside heavily guarded exclusion areas, surrounded by several layers of engineering barriers and equipped with access control systems."[19]

While these physical security methods seem to be quite normal, what is not immediately apparent is how they were designed to operate. The weapons security system was intended to thwart an attack by NATO's special operations forces on the eve of a Third World War. Thus nuclear weapons security relies mostly on the strength of the physical barriers (the guard fences, barbed wire, etc.). Russian tactical nuclear weapons facilities make very minimal use of electronic protection and surveillance systems.[20] In other words, the security system is oriented toward external attack and based on the strength of the protecting force and the robustness of the physical barriers involved. As one expert explains, "under these circumstances,

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[17] The following description of Russian weapons responsibility and control is taken mainly from Oleg Bukharin in "Technical Aspects of Proliferation and Non-Proliferation," in The Nuclear Challenge in Russia and the New States of Eurasia, George Quester, ed. Armonk: M.E. Sharpe, 1995, p. 46.

[18] While most sources indicate that weapons and delivery systems are stored separately, there is no evidence that special procedures are undertaken to ensure separation and access denial between the troops that guard the weapons and those that operate the delivery systems.

[19] Bukharin, "Technical Aspects of Proliferation and Non-Proliferation," p. 46.

[20] Bukharin, "Nuclear Safeguards and Security in the Former Soviet Union," p. 62.

[and without the presence of an electronic monitoring and accountability system] a principal risk of diversion is a corrupted insider (or group of insiders) in the security force."[21] In his testimony before the US Senate on March 20, 1996, Dr. John Deutch, the Director of the Central Intelligence Agency, indicated that "a knowledgeable Russian has told us that, in his opinion, accounting procedures are so inadequate that an officer with access could remove a warhead, replace it with a readily available training dummy, and authorities might not discover the switch for as long as six months."[22]

The size and relative simplicity of tactical nuclear weapons make them easier to target as well. "Tactical weapons...are easy to hide and transport and, under certain circumstances, are directly usable. Indeed, although tactical weapons are protected by mechanical locks and special equipment is required to use them, a state, or even a group of terrorists, can overcome such difficulties given time and resources."[23] Experts familiar with Russian locks on tactical systems indicate that the technical safeguards found on gravity bombs and cruise missiles deployed with Russian bomber divisions are the weakest. Locks on the gravity bombs are not sophisticated, and cruise missiles lack adequate technical protection to inhibit unauthorized use. In fact, Russian sources indicate that a captured cruise missile armed with a nuclear warhead could readily be launched from a variety of aircraft and would produce a nuclear detonation.[24]

Furthermore, Dr. Bruce Blair, an acknowledged expert in Russian nuclear weapons control, points out that the blocking devices are really "just gimmicks designed to buy time." In all probability, the Russian ministries in charge of nuclear weapons are still relying on old Soviet security methods. According to Dr. Blair, "in the event of a serious breach of safeguards in the field, the Russian military establishment would need to promptly dispatch personnel to suppress the disobedience and restore physical control." Moreover, "if social and political circumstances weaken the cohesion of the military, then its ability to deal with such violations would obviously be diminished."[25] As a matter of comparison, the 1994 Nuclear Posture Review in the United States mandated that all US nuclear weapons have Permissive Action Links (PALs) installed on them by 1996. Essentially, even if an intruder was able to

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[21] Bruce G. Blair, "Russian Control of Nuclear Weapons," in The Nuclear Challenge in Russia and the New States of Eurasia, George Quester, ed. Armonk: M.E. Sharpe, 1995, p. 47.
[22] Testimony by Dr. John Deutch before the U.S. Senate, as reported in the Security Issues Digest, US NATO Wireless File, European Wireless File No. 52, Thursday, March 21, 1996, p. 9.
[23] Bukharin, "Nuclear Safeguards and Security in the Former Soviet Union.," p. 61.
[24] The information regarding locks on gravity bombs and cruise missiles is compiled from Bruce Blair, "Russian Control of Nuclear Weapons," p. 61 and p. 80.
[25] Blair, "Russian Control of Nuclear Weapons," p. 61.

breach the security (physical and electronic) of a US nuclear facility, the weapon would either disable itself or not function. This level of protection is limited to Russian strategic systems. Western estimates indicate that only about 45 percent to 65 percent of Russian systems are equipped with PALs and that Russian tactical weapons lack this type of modern security feature.[26]

Whether nuclear warheads have been compromised cannot be accurately determined.[27] However, the conditions for such an event are certainly present, especially in Russia's tactical nuclear weapons arsenal. As Senator Lugar explains, "today the Russian Ministry of Defense and General Staff continues to maintain what we believe to be generally effective control over the arsenal, but not up to US standards.... But the breakup of the Soviet Union, the opening of Russian society and its economic difficulties have subjected this security system to stresses and risks it was not designed to withstand."[28] From a national security perspective, the situation is troubling indeed. Most knowledgeable experts agree that, as Graham Allison writes, "what makes this situation an international security problem without precedent...is that these nuclear weapons and materials are being stored in installations that lack adequate security, [and] which are themselves located inside a highly unstable country."[29]

b. Pre-Delegation and the Doctrine of De-Escalation

One of the principal concerns cited by officials involved in nuclear weapons control issues relates to the doctrine of pre-delegation. This policy has its roots in Cold War Soviet weapons control strategies and is tied to long-standing Soviet practices of maintaining vast and dispersed nuclear forces in launch-ready configuration.[30] Due to the hair-trigger alert postures maintained during the Cold War, the Soviet Union operated under the concept of launch-on-warning—that is, disseminating firing orders after detecting an enemy nuclear launch, but before the missiles reach their targets. "This was and still is a core element of Russian nuclear strategy."[31] The danger involved with maintaining this type of rapid reaction posture is that nuclear missiles could very well be fired on the basis of a false warning. As Dr. Blair indicates,

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[26] Steven Zaloga, "The CIS Nuclear Weapons Industry." Jane's Intelligence Review, Vol. 4, No. 9, September 1992.

[27] Persistent reports denied by the Defense Ministry, for instance, hold that 23 warheads went missing from Komsomolk-na-Amure depot in 1992. Cited by David C. Morrison in "Heavy Metal." National Journal, No. 43, October 22, 1994, p. 68.

[28] Prepared Testimony of Richard S. Lugar before the Committee on Foreign Relations, Subcommittee on Europe, Lexis-Nexis (Federal Information Systems Corporation, Federal News Service), August 22, 1995.

[29] Allison et al., Avoiding Nuclear Anarchy, p. 7.

[30] Blair, "Russian Control of Nuclear Weapons," p. 59.

[31] Ibid., p. 59.

"the breakup of the former Soviet Union increased this risk by politically dismembering the missile attack early-warning network."[32]

Even though Russia still operates under a launch-on-warning concept,[33] the control mechanisms for its strategic systems are relatively secure. The operational philosophy of pre-delegation nonetheless extends to Russia's tactical weapons. In order to increase the survivability and posturing capacity of the tactical nuclear systems (which are more widely dispersed and suffer from a shortage of communications links), the launch authorization codes are pre-delegated to local commanders during times of increased tension. While this does not occur during normal, day-to-day, peacetime operations, the potential for local use is significantly increased during times of conflict.

To compensate for Russia's current conventional weakness, Russian strategists have explicitly sought to "extend the threshold for escalation downward,"[34] thereby increasing the likelihood of a tactical nuclear strike in the face of hostilities. Thus there are two different concepts at work: (1) the procedure of pre-delegating the launch codes; and (2) the operational doctrine of lowering the nuclear threshold. These trends are corroborated by interviews with Russian officials familiar with nuclear weapons strategies. Dr. Nikolai Sokov, formerly an expert on the Soviet delegation to START I as well as other US-Soviet summit meetings, echoes the conclusion that the control of Russian tactical nuclear weapons is stable during peace time.[35] However, "during time of crisis," he explains, "authority is delegated downward. The General Staff sends the launch codes down the chain of command, first to army and corps level, then down to the division level." In the view of this doctrine, Dr. Sokov indicates, one "cannot rule out that a local commander could individually take the authority to launch a weapon."

The assumption that the Russian weapons control system is stable during peace-time is also suspect, however. Due to the lack of technical safeguards, especially on air-delivered

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[32] Ibid., p. 59.

[33] Some Russian officials explain that while this is still necessary, it is neither desirable nor planned for a long-term posture. They indicate that due to the loss of warning and detection infrastructure (Ballistic Missile Early Warning Systems, missile tracking facilities, communication links, etc.) with the collapse of the former Soviet Union, the Russian capability to reliably detect a strategic strike is presently incomplete. Thus, they have to currently opt for a less optimal posture until this deficiency can be adequately addressed.

[34] John R. Lepingwell, "Is START Stalling?" in The Nuclear Challenge in Russia and the New States of Eurasia, George Quester, ed. Armonk: M.E. Sharpe, 1995, p. 108.

[35] The following information is based on an interview conducted by the authors with Dr. Nikolai Sokov in Monterey on August 9, 1996. Dr. Sokov is currently serving as a post-doctoral fellow at the Center for Nonproliferation Studies, Monterey Institute of International Studies. He is a member of the Russian Foreign Ministry (Department of Disarmament and Control of Military Technologies) and is currently on an extended leave-of-absence.

weapons (cruise missiles and gravity bombs), individual actions designed to acquire these weapons even during times of peace are possible. The lack of adequate locking mechanisms on these weapons would then make them deliverable, with a full nuclear yield, even without launch authorization.

Media attention has overwhelmingly been dedicated to the apex of the control system; this focus seems to be at least partially misplaced. While it is largely true that the absence of a stable political system and the reliance on a control system with the potential for sudden shifts in allegiances could cause a breakdown of control, the most important dangers of misuse of nuclear weapons are not associated with the apex, but with the lower echelons of the command system. The Russian practice of pre-delegation carries with it the dangers of a premature weapons release or the employment of a nuclear weapon based on the judgment of a local military commander.

c. Nuclear Dependency in the Face of Conventional Contingencies

Concerns regarding Russia's nuclear policies have been deepened by Russia's increasing reliance on its nuclear forces in the face of dramatically reduced conventional force quality and readiness. Igor Khripunov, a former Soviet diplomat and expert on security affairs, recently noted that some Russian military analysts "make a strong case for maintaining and improving nuclear weapons, *air-based weapons in particular* [italics added], without which Russia cannot adequately protect its security in the current geostrategic situation."[36] It seems to be clear that "the demise of the Red Army that formerly protected Russia shifted the burden of security onto nuclear forces. Russia's new military doctrine abandons its former pledge of no-first-use of nuclear arms, and widens the conditions under which it might use them. By increasing its reliance on these weapons, Russia also magnifies the significance of its nuclear strategy."[37]

In order to operationalize this new reliance on nuclear weapons, Russian officials have chosen to emphasize the value and role of tactical nuclear weapons. They understand that posturing with strategic nuclear systems is practically useless since they believe that there is a very basic state of strategic equilibrium between the United States, Russia, and China. Therefore, the solution to making the nuclear threat more credible is to articulate a greater role for tactical nuclear weapons since these weapons are viewed as "warfighting weapons." In fact, there has

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[36] Igor Khripunov, "Russia's Dangerous Weakness," in Armed Forces Journal International, June 1996, p. 40.

[37] Bruce G. Blair, "Russian Realities and the Illusion of Arms Control." Lexis-Nexis (The Christian Science Publishing Society, the Christian Science Monitor), September 19, 1995.

been evidence that some Russian officials are considering redeploying tactical nuclear weapons in forward locations (such as land-based systems in Belarus and Kaliningrad and sea-based systems on the ships of the Baltic fleet). Sergei Kortunov, a member of the Russian security council and the deputy director of the Analytic Directorate of the President of the Russian Federation, recently warned that in the face of a mounting unfavorable balance in the correlation of forces, Russia might resolve to re-evaluate the 1991 unilateral tactical nuclear weapons initiatives. "You know that not long ago the Soviet Union and then Russia assumed unilateral obligations to eliminate and withdraw tactical nuclear weapons." He indicated the possibility that "the decision could be very well revised."[38] Other Russian officials have also alluded to potential initiatives regarding tactical nuclear systems. Major General Belous, a recognized authority on nuclear weapons strategy, has stated that "there is no doubt that in the present geopolitical situation a number of Russian TNW [theater nuclear weapons], particularly air-based ones, should be retained..." Belous regards tactical nuclear weapons as "the equalizer which would deprive NATO of its new-found military superiority." He mentions the possibility to "carry out a 'demonstration' TNW detonation to prove to an aggressor our resolve to use nuclear weapons." He concludes that "faced with an economic crisis and a rather modest ability to equip its army and navy, for the foreseeable future Russia will be forced to rely on nuclear weapons to ensure its security."[39]

General Belous' comments regarding the necessity to rely on tactical nuclear weapons, including air-delivered nuclear weapons, are consistent with recent Russian efforts to redesign and refocus the heavy bomber fleet. The Russian air force recently initiated training for its strategic bomber crews to operate as a "'composite force' multi-element tactical strike package." The objective, according to observers, is to mold the TU-160 Blackjacks, TU-22 Backfires, and TU-95 Bears into bomber regiments with a rapid-response doctrine for the delivery of cruise missiles or bombs to targets on the periphery of Russia's borders.[40] Although the exercises have been portrayed as conventional ordnance missions, the bombers are not limited to

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[38] "Press Conference with Officials of the Presidential Analytical Directorate Regarding Russia's National Security Policy." Lexis-Nexis (Federal Information Systems Corporation, Official Kremlin Int'l News Broadcast), April 26, 1996.

[39] While Russian threats regarding the use of nuclear weapons in the face of NATO enlargement became prolific toward the end of 1995 and during the first half of 1996, these statements may have largely been political posturing as a result of the June 1996 Presidential elections. The statements above do not represent this type of rhetoric. On the contrary, they are brought forth by seasoned strategists who are contemplating Russia's new conventional dilemmas. See Belous. "Tactical Nuclear Weapons: A Half-Forgotten Reality."

[40] Craig Covault, "Russian Bomber Force Seeks Tactical Role." Aviation Week & Space Technology, November 15, 1993, p. 44.

carrying conventional weapons loads and are in fact fitted to carry the AS-4, AS-6, AS-15, and AS-16 nuclear-tipped missiles as well as nuclear gravity bombs. A recent statement of understanding between Russia and Ukraine on the purchase of several dozen heavy bombers (those acquired by Ukraine after the collapse of the former Soviet Union) indicated that agreement on the transfer of the aircraft has been reached. This will allow Russia to field a fleet of 90 heavy bombers with approximately 500 nuclear-tipped missiles.[41]

There is considerable evidence that Russia today is re-emphasizing its nuclear forces and posturing its tactical nuclear systems as front line weapons through doctrinal reassessments and pre-delegation. Recent policy statements by respected and recognized Russian officials attest to the fact that this is not just rhetoric, but rather seems to represent deep-seated concerns in light of the severe decline in Russia's conventional forces. To some degree, this reposturing is understandable and should be expected. However, as Deputy Secretary of Defense John Deutch pointed out at the 1994 NPR press briefing, "let me remind you that Russia has little prospect of returning to the kind of conventional force structure they had at the height of the Cold War, given the collapse of their economy and change in political system. It is a less expensive and less demanding matter for them to return to a much more aggressive nuclear posture. So if something does go wrong in Russia, it is likely that it is in the nuclear force area that we will face the first challenge."[42]

d. Stockpile Consolidation and Stewardship Efforts

Following President Gorbachev's October 1991 unilateral initiatives, the Soviet Union and then Russia initiated a long-term consolidation and dismantlement program, engaging the entire spectrum of its nuclear weapons arsenal. While these efforts have, to some degree, reduced the concern about the security of Russian nuclear weapons, they also have, for the foreseeable future, increased the danger in the following ways:

- First, the loss of weapons-storage facilities in non-Russian republics and the mass withdrawal of weapons from front-line units and from non-Russian republics has created a deficit of storage facilities.
- Second, the security of weapons might be compromised by their transfers en masse to central storage facilities, dismantlement, and refurbishment plants.
- Third, the process of dismantlement and refurbishment raises the issue of the security of the components of dismantled warheads while they are stored and

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[41] Vleriy Alekxandrovich Dementyev, "RF Armed Forces Reform Strategy: A Specific Plan must be Developed and Approved Based on Two Doctrines--Military and National Security." Nezavisimoye Voyennoye Obozreniye, FBIS-UMA-96-080-S, 11 April 1996.

[42] John Deutch cited in Boldrick, Michael R. "The Nuclear Posture Review: Liabilities and Risks." Parameters, Vol. XXV, No. 4, Winter 1995-96, p. 88.

transported, as well as the security of those components which are recycled back into the active stockpile.[43]

(1) Loss of Weapons Storage Facilities. When the Soviet Union first initiated the process of weapons consolidation (mainly out of fear of the loss of control as the USSR was collapsing), tactical nuclear weapons were broadly dispersed throughout the empire. They were "scattered throughout at least nine or ten republics; were kept in hundreds of storage sites, a large number of which were adjacent to the operational forces that would use the weapons in the event of a conflict, came in a substantially wide variety of models; and not all varieties possessed safeguards."[44] Furthermore, the weapons were deployed among four different military organizations (the Red Army, the Soviet Navy, the air defense forces, and the air force); the Russian military owned nearly 15,000 tactical weapons, of which almost 6,500 were deployed outside of the Russian republic; and the system was not prepared for the rapid saturation that it experienced.[45]

Much to the credit of the General Staff and the Ministry of the Defense, the weapons were withdrawn rapidly—although not always under the safest of circumstances. For example, officials have indicated that in one case, air-delivered nuclear weapons deployed outside the Russian Federation were flown back on Russian medium-range bombers after being evacuated from a military airfield. According to eyewitness reports, a large number of activists from the Popular Front for Azerbaijan had blockaded a military airfield where weapons were being stored. Officials decided to load the weapons on TU-22 Backfire bombers, but as the aircraft readied for takeoff, they were blocked by protesters and activists. The local security forces used heavy weapons fire in order to clear the runway long enough for the aircraft to depart. This example illustrates the haste with which some of the weapons were pulled out of destabilized areas.[46]

Once consolidation efforts were underway, it rapidly became apparent that the Russian nuclear weapons storage and stewardship capacity was under serious stress, and was unable to safely handle the large number of weapons which were being withdrawn to the Russian Federation. Oleg Bukharin, a recognized scientist and nuclear weapons expert, explains that "although Russia is used to high rates of dismantlement, what is new is the mass relocation of tactical warheads from front-line units to central staging bases and assembly plants, unplanned

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[43] Bukharin, "Nuclear Safeguards and Security in the Former Soviet Union.," p. 27.
[44] Steven E. Miller, "Western diplomacy and the Soviet nuclear legacy." Survival, Vol. 34, No. 3, Autumn 1992, p. 7.
[45] Ibid., p. 7.
[46] This information was revealed to the authors on condition of the source's anonymity.

increases in storage requirements for warheads and weapons components, economic crises, and ... the deteriorating security environment that may compromise safety and security."[47] Bukharin notes, for example, that violations in storage rules, faulty warhead designs, and poor maintenance have resulted in a potentially dangerous conditions in one storage facility. "Elevated temperatures, humidity, and changes in the gas atmosphere inside the warhead may in turn cause the high-explosive components to age, degrading their physical integrity and increasing [their] sensitivity."[48]

Detailed studies reveal that storage capacities have been sharply reduced.[49] Before the collapse in 1991, the Soviet armed forces and the Ministry of Atomic Energy (MINATOM) had around ninety storage cites for nuclear weapons; forty-three of them were situated beyond the borders of the Russian Federation. In addition, three more army missile technical bases were evacuated from the North Caucasus military district after instability and turbulence broke out in this area. Consequently, the Russian Federation now operates only 38 storage facilities, and there are three storage facilities at disassembly and refurbishment plants. According to knowledgeable experts, the overloading at Russian nuclear weapons storage sites ranges around 67 percent. Security and safety measures are likely to suffer under such levels of overloading and stress on Russia's nuclear weapons management system.

(2) Weapons Security During Transfers and Movements. "The geographic and bureaucratic dispersal of the Russian nuclear complex means that weapons and materials are regularly being transported, handled, and transferred from one facility or organization to another. These activities all increase the risk of theft, and diversion."[50] Recent Russian articles have indicated that the average life span of a Russian nuclear device is around 10-15 years, and that annually about 2000 to 3000 warheads have to be refurbished.[51] This requires high rates of movement and transfer. In fact, "Russia's weapons, weapon components, and bulk fissile materials are transported at a much greater rate than in the United States."[52] There appear to be several reasons for this. First, the Russian requirements for consolidation are much bigger

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[47] Oleg Bukharin, "Stored Nuclear Warheads Could Become Unstable." Lexis-Nexis (Newspaper Publishing PLC, The Independent), February 22, 1994.
[48] Ibid.
[49] The following estimates are obtained from a detailed report by Anton Surikov and Igor Styagin entitled "The Movement and Storage of Russian Nuclear Weapons." Jane's Intelligence Review, Vol. 6, No. 5, May 1994.
[50] Allison et al., Avoiding Nuclear Anarchy, p. 31.
[51] Zaloga, "The CIS Nuclear Weapons Industry," p. 391.
[52] This information regarding weapons transportation is detailed by Owen R. Coté, Jr., in his Appendix A. "The Russian Nuclear Archipelago" in Allison et al., Avoiding Nuclear Anarchy, pp. 192-93.

than those in the United States. Second, "because MINATOM is storing all dismantled weapon components away from its weapon disassembly facilities, this created traffic that does not exist in the US complex, where pits are stored on site at the weapons disassembly facility."[53] Finally, the high-level maintenance needs (and relatively short life spans) of Russian nuclear weapons create multiple streams of traffic between the MINATOM assembly/disassembly facilities, and Ministry of Defense deployment areas or forward storage bases.

The weapon transportation requirements dictate that Russia depend on a troubled rail net, a system beset by physical vulnerability, especially as "weapons and/or components are transferred at the various hand-off points between the rail net and local road transportation." U.S. officials who have examined the Russian rail net under the auspices of the US Cooperative Threat Reduction (CTR) program indicate that it is deteriorating physically. Furthermore, the links that it provides between Russian nuclear installations pass, of necessity, through urban areas and through regions unsettled by ethnically based movements for local autonomy:

- Nuclear transportation routes that pass through large urban areas increase the consequences of an accident, decrease the capabilities of any defensive troop escorts, and reduce the probability that weapons, once lost or stolen, could be recovered.
- Routes that pass through regions of ethnic unrest expose nuclear weapons to the additional risk of becoming embroiled in local political or military conflicts with the central government.[54]

Thus, a system of weapons transportation which, under normal circumstances, only functioned well due to rigidly imposed Soviet security measures, is now overburdened and increasingly a candidate for rupture.

(3) Dismantlement and Refurbishment. "Unlike their US counterparts, Soviet weapons were not designed to have long shelf lives. Instead, deployed weapons are continuously cycled back to their place of assembly for maintenance and refurbishment."[55] In addition, weapons components are often shipped back to assembly plants for other maintenance requirements. According to some accounts, weapons need depot-level maintenance every seven

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[53] Ibid, p. 193. A "pit" is the primary part of a nuclear weapons physics package, consisting of a sphere of machined and processed plutonium or highly enriched uranium.

[54] Ibid., p. 194.

[55] Owen R. Coté, Jr., provides a meaningful comparison with regard to this issue. U.S. weapons are designed to last up to thirty years with nothing but field-level maintenance. A stockpile surveillance program ensures the reliability of deployed weapons by periodically bringing a small, random sample of each weapon type back to the Pantex plant in Texas for analysis. Only if major unanticipated problems were discovered would an entire class of weapons be recalled to Pantex for modification. Ibid., p. 180.

years.[56] "In a stockpile of tens of thousands of weapons, this maintenance cycle creates a continuous, two-way traffic in fissile materials and assembled weapons between fissile material production facilities, component assembly sites, weapon assembly sites, weapon storage sites, and weapon deployment areas."[57]

Other sources seem to corroborate these findings regarding the strain related to weapons dismantlement and refurbishment. According to Oleg Bukharin, "warhead dismantlement places an additional burden on the system of nuclear safeguards in Russia."[58] The warhead elimination process contributes highly enriched uranium and plutonium to an already overburdened system. While on the order of two hundred metric tons of highly enriched uranium and forty metric tons of plutonium have already been garnished from dismantled warheads, another three hundred metric tons of highly enriched uranium and sixty metric tons of plutonium from weapons dismantlement will probably be available in the coming decade.[59] In addition, "every dismantled nuclear weapon results in at least two, and sometimes three, substantial chunks of fissile material: the primary, secondary, and sometimes even tertiary stages"; hence, dismantling weapons at the rate of 2,000 to 3,000 per year may produce more than 4,000 to 6,000 fissile components that must be either stored and reconstituted, or eliminated.[60] "Control of these materials during storage and disposition is difficult because of their large quantities, the high rates of recovery from weapons, and the lack of adequate storage facilities."[61] Furthermore, the Russians are neither legally bound nor otherwise obligated to internationally declare the quantities and locations of these weapons grade materials or to permanently dilute or disable them.

While some officials have alleged that MINATOM has refabricated some of the weapons grade material into new warheads, this is difficult to prove or verify. However, it is well known that MINATOM and the Ministry of Defense have taken advantage of the unilateral initiatives and the consolidation process to rid themselves of old and obsolete weapons and warheads. While the view that the Russians are dismantling between 2000 and 3000 warheads per year has been widely circulated, this view should be placed into perspective: (1) many of these weapons were scheduled for dismantlement anyway; (2) the actual dismantlement process is unverified and unobserved; (3) one cannot be sure that new warheads are not being designed and

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[56] Ibid., p. 181.
[57] Ibid., p. 181.
[58] Bukharin, "Technical Aspects of Proliferation and Non-Proliferation," p. 43.
[59] Ibid., p. 43.
[60] Allison et al., Avoiding Nuclear Anarchy, p. 43.
[61] Bukharin, "Technical Aspects of Proliferation and Non-Proliferation," p. 43.

built; and (4) no mechanism exists to encourage accountability for the highly enriched uranium and plutonium that are obtained through the dismantlement process.

e. Demoralized Personnel and Internal Security Problems

Although problems related to nuclear weapons storage, transportation, dismantlement, and refurbishment are severe, the potential impact from a fissured society and a disgruntled military is potentially even worse. As Ashton Carter and others pointed out in 1991:

> In the last analysis the custodial system for nuclear weapons is a social system. It will be strong when the society in which it is embedded is stable, and it will behave according to its intended design when organizational norms and routines are being followed by most of the people most of the time. But it is not possible to exhibit, or even imagine, a set of safeguards on the Soviet arsenal that gives total reassurance against abuse in the midst of a general social upheaval.[62]

In this sense, the overwhelming concern is that the Russian government, weakened as it is, no longer effectively controls its territory and its people. In the Soviet Union, the nuclear establishment had no need for extensive and technologically advanced barriers at its weapons storage facilities because of the government's rigid internal controls. "'Back in the old days,' [an] official explained, 'the lack of physical safeguards did not matter. Even if someone had shot off a lock [and seized military goods], the government would send the KGB after them. The basic assumption was that physical security was backed up by overall control [of society].'"[63] The Soviet Union was never forced to develop a robust materials control and accountability system, because "it had a pervasive central system regulating the movements of its citizens and monitoring suspicious activities."[64]

Now that this system has been swept away, its original shortcomings are being exposed. In hearings before the Senate Committee on Foreign Relations, Senator Lugar, a U.S. advocate of improved transparency programs, explained that "the military is now facing a crisis situation in housing, pay, food, manning levels, and social services, all of which have resulted in plummeting morale and lapses in discipline."[65] Furthermore,

> although nuclear weapons handlers traditionally were among the best treated and loyal [troops] in the Russian military, they are probably suffering hardships

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[62] Ashton Carter et al., Soviet Nuclear Fission: Control of the Nuclear Arsenal in a Disintegrating Soviet Union, CSIA Studies in International Security No. 1, Harvard University: Center for Science and International Affairs, 1991, p. 16.

[63] Seymour M. Hersch, "The Wild East." The Atlantic Monthly. June 1994, p. 69.

[64] Frank von Hippel, "Fissile Material Security in the Post-Cold-War World." Physics Today, June 1995, p. 27.

[65] Richard Lugar, The Senate Foreign Relations Committee's European Affairs Subcommittee Hearing on Nuclear Smuggling, Lexis-Nexis, August 22, 1995.

> similar to those of the rest of the armed forces. Budget cuts to the military also have reportedly affected the redundancy of security equipment and personnel at facilities where weapons are stored. Security procedures used by the Russians in the past were not designed to counter a well planned insider threat.[66]

Most officials consider the possibility of an insider threat a legitimate concern. Given the scope of nuclear activities in the former Soviet Union and the number of people involved, the possibilities include (1) removal of a weapon or of weapons components from a processing area during a false or prearranged fire or criticality alarm, (2) a conspiracy or collusion between high-ranking employees, or (3) other opportunities that take advantage of chaos and mismanagement.[67] In fact, according to data presented by the Federal Counterintelligence Service, the physical protection of nuclear materials (in many facilities) does not preclude unsanctioned access to the nuclear components of warheads.[68]

Senator Lugar's concerns regarding the state of the Russian military are echoed by former Ambassador Jonathan Dean. Problems of instability in Russia are intensified by rising crime rates and increased official corruption. "In 1992, some 4,000 verdicts of corruption were brought against officers of the Russian armed forces. The Russian defense ministry reported 4,000 cases of theft of conventional weapons, some of them very large, from military depots in 1992, and nearly 6,500 cases in 1993."[69] Russian officials continue to insist that the tactical nuclear weapons are maintained under a strict security regime, and they vehemently reject as unfounded all accounts of subterfuge or theft. The United States, however, has no direct knowledge of the situation—there is no monitoring, no data exchange, and no verification agreement.[70] The Russians have consistently refused to implement the May 1995 Yeltsin-Clinton agreement calling for a nuclear weapons stockpile data exchange.

Several disturbing incidents involving nuclear weapons in the Russian Federation have been reported. "In one highly celebrated instance, inspectors from the Russian Ministry of

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[66] Ibid.

[67] Oleg Bukharin, "The Threat of Nuclear Terrorism and the Physical Security of Nuclear Installations and Materials in the Former Soviet Union." Occasional Paper No. 2, Center for Russian and Eurasian Studies, Monterey Institute of International Studies, August 1992, p. 2.

[68] Bolsunovsky and Menshchikov, "Nuclear Security is Inadequate and Outdated."

[69] Jonathan Dean, "The Final Stage of Nuclear Arms Control."

[70] However, an account of potential diversion indicates otherwise. "On November 30, 1995, a former Greenpeace member revealed that the organization had been offered a nuclear warhead by a disgruntled former Soviet officer keen to highlight lax security, according to press accounts. The former Greenpeace official stated in a recently published book that a Soviet officer with access to nuclear weapons offered Greenpeace an 800kg nuclear Scud warhead for public display in Berlin. The offer was made shortly before 7 September 1991." This account is taken from the Security Issues Digest, USNATO Wireless File, European Wireless File No. 52, Thursday, March 21, 1996, p. 12.

Defense found a battery of nuclear-armed SS-25 mobile missiles completely deserted—all the operators and guards having left to search for food."[71] In another incident, an enlisted man at an ICBM base in the Altai region went berserk in March 1994, killing two soldiers and seriously wounding another two. The local Strategic Rocket Forces commander initially tried to cover up the incident, but it leaked to first the regional and then the national press. In a different case, three people were killed before the attacker was seized; he had taken sailors hostage aboard a torpedo boat.[72] As Lepingwell points out, "these dramatic incidents suggest that if crazed troops can create mayhem in high-security facilities, rather more sane criminals could perhaps wreak even more havoc."[73]

4. Conclusion

Taken as a whole, there seem to be substantial opportunities for security breaches, theft, and system compromise in the nuclear weapons complex of the Russian Federation today. In addition, there is one certainty about the state of Russian nuclear weapons, both strategic and non-strategic, as well as the military personnel that operate these systems: the Russian Federation is convinced that ultimately, its security rests upon these weapons, and it has therefore taken care to shield both the personnel and the hardware from the effects of the military rollback. In addition, because the Russian military planners not only appreciate the political deterrent value of nuclear weapons, but also have always been intrigued by their war-fighting applications, the Russian military and scientific elite continues to invest in their operational future.

C. THE ATLANTIC ALLIANCE AND WMD PROLIFERATION

One of the strategies advanced by the Atlantic Alliance in its efforts to combat the threats from WMD proliferation invokes the role of its non-strategic nuclear forces stationed in Europe. NATO's nuclear forces have traditionally been seen as a means to discourage proliferants from acquiring WMD—that is, nuclear, chemical, or biological weapons—or to deter proliferants from using these weapons.[74] While this role is still articulated today, is there really a link between U.S. non-strategic nuclear forces in NATO Europe and the prospects of nuclear proliferation on

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[71] The SS-25 Topol, in addition to currently being Russia's premier land-based ICBM, is a strategic system. Strategic weapons are, according to accepted norms, the best protected and secured weapons in the Russian arsenal! Allison et al. Avoiding Nuclear Anarchy, p. 8.

[72] The previous two incidents are described in John Lepingwell's "Is START Stalling?" chapter in The Nuclear Challenge in Russia and the New States of Eurasia, pp. 102-03.

[73] Ibid., p. 103.

[74] Gregory L Schulte, "Responding to Proliferation: NATO's Role," in NATO Review, WEB Edition, Vol. 43, No. 4, July 1995.

NATO's periphery? Furthermore, what is the role of these weapons in curtailing proliferation internal to the Atlantic Alliance?

United States and NATO nuclear declaratory policy contains elements of studied ambiguity. One reason is that the Alliance is snared by a dilemma: while NATO argues that nuclear weapons will for the foreseeable future remain the foundation of its security, this reliance lends significance to nuclear weapons, thereby undermining non-proliferation policies. Paradoxically, a vigorous declaratory doctrine (which could strengthen deterrence vis-à-vis proliferators), would run contrary to all efforts currently underway to de-emphasize the role of nuclear weapons as military and policy tools. Those officials and policy makers who believe that the United States should steadfastly support regimes such as the Non-Proliferation Treaty and the Comprehensive Test-Ban Treaty find it difficult to reconcile them with a robust nuclear doctrine and infrastructure. Thus, according to Katherine Bailey, a non-proliferation expert at Lawrence Livermore National Laboratory, "the United States holds contradictory policies which are on a collision course. On the one hand, it repeatedly commits [itself] to the goal of total nuclear disarmament. On the other, it depends on nuclear deterrence for security. In the past, U.S. policy makers have avoided rectifying the contradiction by labeling disarmament as a long-term goal. However, this is increasingly unacceptable to non-nuclear weapon states, who rightly observe that the United States is not seriously willing to undertake total nuclear disarmament as its part of the bargain under the NPT."[75]

This fundamental tension in nuclear declaratory policy is increasingly prevalent today. It could influence the status of U.S. nuclear forces in Europe as well as NATO's nuclear strategy and declaratory doctrine. In order to determine how these weapons inhibit or contribute to internal and external proliferation (with regard to NATO), this section addresses several issues. First, it discusses the debate today between the no-first use (NFU) advocates and the NFU opponents. Second, it engages the roots of NATO's proliferation concerns—internal and external—and evaluates how these concerns are moderated or heightened by the presence of U.S. nuclear weapons in Europe. Finally, the section concludes by describing the enduring ambiguities and dilemmas central to non-proliferation strategies in the Atlantic Alliance.

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[75] Kathleen Bailey, "Why We Need to Keep the Bomb," in Lexis Nexis (Information Access Company, Educational Foundation for Nuclear Science, Bulletin of Atomic Scientists), January 1995.

1. The Debate: NFU Advocates and NFU Opponents

On April 24, 1996, the Department of Defense broke a long-standing tradition of nuclear ambiguity by referring to the potential use of a U.S. nuclear weapon against a clearly identified target. In remarks to the press regarding the alleged Libyan chemical weapons facility under construction near Tarhunah, Dr. Harold P. Smith, the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs, indicated that the United States "could not take it out of commission using strictly conventional weapons."[76] Furthermore, Dr. Smith indicated that "if we wanted to destroy the Libyan plant, the B-61[77] will be the nuclear weapon of choice."[78] These statements were supported by additional, if less precise, comments issued by other government agencies. "Libya should not be permitted to finish the plant," a State Department official indicated.[79] The Secretary of Defense, William Perry, pledged that the United States would not be limited to current economic and diplomatic measures to prevent countries such as Libya, Iran, and Iraq from developing weapons of mass destruction. Secretary Perry warned that "if necessary, the United States is fully prepared to take other, more drastic preventive measures."[80] Finally, in reference to a hypothetical chemical attack on U.S. forces, Secretary Perry stated that "we would not specify in advance what our response to a chemical attack is, except to say that it would be devastating." He added that "we have a wide range of military capabilities to make good on that threat." When asked whether this characterization of the response included possible nuclear retaliation, Dr. Perry responded: "The whole range would be considered; that is correct."[81]

After a lengthy period of governmental silence and ambiguity regarding the role of nuclear weapons, these statements provoked debate by policy makers and experts alike. On the one side, NFU advocates argue that publicizing the roles and utility of nuclear weapons would only serve to undermine the entire non-proliferation regime. On the other hand, NFU opponents

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[76] Dr. Harold Smith quoted in "U.S. Lacks Earth Penetrating Weapons." Lexis-Nexis (Information Access Company, Newsletter Database, Phillips Business Information, Inc., Armed Forces Newswire Service), April 24, 1996.

[77] The B-61 nuclear weapon is an air-delivered gravity bomb with a variable yield from 10 to 150 Kt (according to Jane's Strategic Weapons Systems, 1995 Update page). Mod 11 of the B-61 is developed as an earth-penetrating strike weapon to be employed against deeply buried or hardened targets.

[78] Dr. Hal Smith quoted by Art Pine in "Only A-Bomb Could Destroy Libya Plant, Scientist Says." Lexis-Nexis (Times Mirror Company, Los Angeles Times), April 24, 1996.

[79] Terry Atlas, "U.S. Threatens 'Drastic' Action Against Libya." Lexis-Nexis (Toronto Star Newspapers, Ltd., The Toronto Star), April 25, 1996.

[80] Dr. William Perry quoted by Terry Atlas in "Clinton Weights Action on Libya." Lexis-Nexis (Chicago Tribune Company, Chicago Tribune), April 24, 1996.

[81] Dr. William Perry quoted by Martin Sieff in "Devastating' Reply to Gas Attack Vowed." Washington Times, March 29, 1996, p. 6.

maintain that straightforward policy articulations can uphold a robust deterrence regime, especially in a multi-polar security environment.

a. The No-First Use Advocates

NFU advocates tend to believe that the only means of attaining a world liberated from pervasive threats of nuclear employment is to steadfastly strive for the delegitimization of nuclear weapons as well as the eventual achievement of global nuclear disarmament. Those who believe this to be achievable usually tend to strongly support a treaty-based agenda, relying heavily on the Non-Proliferation Treaty, the Comprehensive Test Ban Treaty, and security assurances by the major nuclear powers. To those who advocate this approach, the comments by Dr. Perry and Dr. Smith undermine U.S. and NATO non-proliferation policy and contradict U.S. negative security assurances.

United States negative security assurances were first articulated in 1978 by Secretary of State Cyrus Vance on behalf of President Carter at the United Nations Special Session on Disarmament:

> The United States will not use nuclear weapons against any non-nuclear weapons state party to the NPT or any comparable internationally binding commitment not to acquire nuclear explosive devices, except in the case of an attack on the United States, its territories or armed forces, or its Allies, by such a state allied to a nuclear weapons state, or associated with a nuclear weapons state in carrying out or sustaining the attack.[82]

Thus, in the words of one NFU advocate, "a new exception to U.S. non-use pledges would undermine the U.S. leadership role in international efforts to prevent the spread of nuclear weapons."[83] According to NFU advocates, who see little or no utility in nuclear weapons, the most persuasive tool that nuclear weapon states have to decrease the motivation toward proliferation is to de-emphasize and preferably, to de-legitimize, the role of nuclear weapons as instruments of national policy.[84] As George Bunn writes,

> Ultimately, success in preventing nuclear proliferation depends on persuading the nuclear 'have-nots' that there is a strong international norm against their acquiring nuclear weapons and that their security and position in the world will not be enhanced by the possession of such weapons. That persuasion, in part, depends on their perceptions of what other countries—particularly the nuclear-weapon states—are willing to do to enforce the NPT's norm against permitting the

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[82] U.S. Arms Control and Disarmament Agency, Arms Control and Disarmament Agreements: Texts and Histories of Negotiations. Washington D.C.: Government Printing Office, 1982, p. 87.
[83] George Bunn, "Expanding Nuclear Options: Is the U.S. Negating its Non-Use Pledges?" in Arms Control Today, May/June 1996, p. 10.
[84] Ibid., p. 10.

> emergence of additional nuclear-weapon states, and of the negative consequences for their prestige, security and political leverage from acquiring nuclear weapons.[85]

Current U.S. and NATO nuclear declaratory policy does not fully support these objectives. On the one hand, the Nuclear Policy Review of 1994 appears to have retained the U.S. and NATO policy of first use, whereby nuclear weapons may be used to halt any type of attack on Alliance members, albeit as "weapons of last resort." On the other hand, the United States reiterated its negative security assurances to non-nuclear states, pledging to refrain from nuclear attacks against them, so long as they are not allied or associated with a state armed with nuclear weapons and committing aggression against the United States or a U.S. ally. But experts point out that these two policies impose an underlying dilemma: they "contradict one another with regard to the increasingly critical issue of whether the United States [and NATO] reserve the option of retaliating with nuclear weapons against biological and chemical attacks."[86] This option is reflected in U.S. military doctrine. According to William Arkin,[87] in April 1993 General Colin Powell approved the Doctrine for Joint Nuclear Operations (Joint Publication 3-12). "The doctrine declared that 'the fundamental purpose of U.S. nuclear forces is to deter the use of weapons of mass destruction....' Furthermore, it defined weapons of mass destruction as 'nuclear, biological, or chemical.'"[88] The doctrine therefore blurs the line with regard to U.S. negative security assurances. It is at odds, NFU advocates maintain, with past pledges used by the United States to attain consensus during the initial NPT negotiations and subsequent NPT review conferences.

Thus, NFU advocates argue that "as a result of the current confusion, both U.S. credibility as a reliable treaty partner and the U.S. leadership role in the non-proliferation regime may be seriously undermined."[89] According to George Bunn and others, the United States is failing to live up to its *quid pro quo* agreement with the non-nuclear states when it undermines its own negative security assurances. After all, two of the prime reasons that non-nuclear states signed and adhere to the NPT (indefinitely extending the treaty in 1995) are (1) the inclusion of

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[85] Ibid., p. 10.
[86] David Gompert, Kenneth Watman, and Dean Wilkening. "Nuclear First Use Revisited," in Survival, Vol., 37, No. 3, Autumn 1995, p. 29.
[87] William Arkin is a former U.S. Army intelligence officer and a prolific writer. His work is often published in the Bulletin of Atomic Scientists.
[88] William M Arkin, "A Fine Garble: Contradictions of Nuclear Weapons Policy," in Lexis Nexis (Information Access Company, Educational Foundation for Nuclear Science, Bulletin of Atomic Scientists), May 1995.
[89] George Bunn, "Expanding Nuclear Options: Is the U.S. Negating its Non-Use Pledges?" p. 7.

article VI calling for global nuclear disarmament, and (2) the pledges of nuclear weapons states not to employ nuclear weapons against them.

Some NFU advocates would like to see the United States and its NATO Allies refrain from attributing utility to nuclear weapons as policy tools except in response to an opponent's use of nuclear weapons. Instead, they prefer to see the United States rely almost entirely on its conventional military superiority in combat contingencies. More importantly, they advocate (in concert with most other strategists) an increasingly robust campaign to deny non-nuclear weapons states the capability to acquire nuclear weapons and other weapons of mass destruction. Thus, their response mechanism to attacks on the United States and its NATO Allies would look like this:[90]

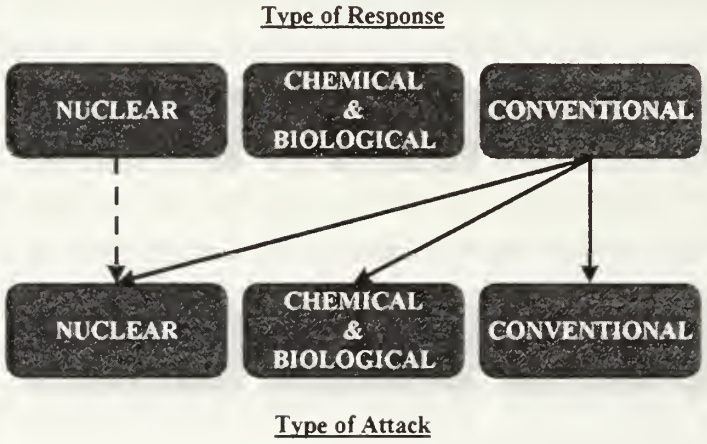

Figure 2.1 NFU Advocate Response Spectrum

The response would be situational. However, if at all possible, NFU proponents would advocate a conventional response, even if the United States and/or its Allies were attacked by a proliferant with a nuclear device. They argue that a nuclear response would simply reinforce the idea that nuclear weapons are useful. A devastating conventional reply, however, would ensure that other potential proliferators would understand that nuclear weapons do not endow the possessor with credible means for coercion, and in fact only serve to endanger such states.

b. The No-First Use Opponents

NFU opponents draw a distinction between policies of public faith and international norms, and policies which ensure that national security objectives are guarded and

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[90] The concepts for this type of presentation throughout this chapter are taken from David Gompert, Kenneth Watman, and Dean Wilkening. "Nuclear First Use Revisited."

protected. Michael Mandelbaum elegantly describes this continuum when he refers to Walter Bagehot's 1872 book, *The English Constitution*. In this book, Bagehot "distinguishes between the 'dignified' parts of the British system of government, 'which excite and preserve the reverence of the public' and the 'efficient' parts, 'those by which it, in fact, works and rules.' Mandelbaum argues that for the global *Constitution* of nonproliferation during the Cold War, the NPT constituted the dignified part of this arrangement.[91] However, its efficiency in limiting the spread and use of nuclear weapons stemmed from U.S. nuclear security guarantees made to its NATO partners, as well as the actual presence of a diversified U.S. nuclear posture in Europe.

NFU opponents emphasize that, while international treaty regimes are positive policy tools, they should not be left to stand alone in ensuring effective non-proliferation regimes: Treaties can only ratify interests. When a consensus develops in a nation that the NPT no longer serves its interests, there is nothing either legally or practically to prevent it from bailing out. There is no reason to believe that the NPT should be any more successful in preserving peace than the greatest international institution: the United Nations. Both are valuable symbols, effective at the margins, but insufficient to their purposes. They should be supported and reinforced, but are hardly to be relied on.[92]

One of the most lucid assessments regarding the failure of the international treaty environment to stem proliferation comes from Dr. David Kay, one of the chief inspectors of UNSCOM, the United Nations Special Commission set up to uncover and expose Iraq's nuclear weapons program after the 1990-1991 Gulf War. As Kay indicated in Congressional testimony, "the failed efforts of both the International Atomic Energy Agency (IAEA) safeguards inspectors and national intelligence authorities to detect prior to the Persian Gulf War a nuclear weapons program of the magnitude and advanced character of Iraq's should stand as a monument to the fallibility of on-site inspections and national intelligence when faced by a determined opponent."[93]

Going beyond the drawbacks in the NPT, NFU opponents tend to promote three arguments why the international treaty regime and its enforcement mechanisms are not the best foundation for non-proliferation strategies. First, they believe that the elimination of weapons

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[91] Michael Mandelbaum, "Lessons of the Next Nuclear War," in Lexis Nexis (Council on Foreign Relations, Inc., Foreign Affairs), March/April 1995.

[92] Richard K. Betts, "Paranoids, Pygmies, Pariahs and Nonproliferation Revisited," in The Proliferation Puzzle, Zachary S. Davis and Benjamin Frankel, eds. London: Frank Cass and Company Limited, 1993, p. 112.

[93] Prepared Statement of David Kay before the Senate Governmental Affairs Committee, Permanent Subcommittee on Investigations, Iraq and Beyond: Understanding the Threat of Weapons Proliferation, Lexis Nexis (Federal Information Systems Corporation, Federal News Service), March 20, 1996.

classes and categories will not by itself make war or conflict unlikely. Ivo Daalder quotes Thomas Schelling when he writes that "if disarmament 'is to make war unlikely, it must reduce the incentives. It cannot eliminate the potential for destruction; the most primitive war can be modernized by rearmament as it goes along... In short, the problem is not so much the existence of nuclear weapons as that international society is organized around a system of states that lacks central authority."[94]

Second, as Katherine Bailey points out, although there is peace between the East and the West, there is neither stability within nor the absence of threat from the former Soviet Union. The nuclear threat emanating from the Russian Federation is more the result of a crumbling nuclear infrastructure than it is a threat in the classical sense. Nevertheless, Dr. Bailey rightly indicates that "in terms of military prowess, the Russian nuclear weapons program is fully functional, while the U.S. program is virtually frozen. The United States is no longer producing new nuclear weapons; Russia is. The United States no longer produces plutonium or tritium for weapons; Russia does. Essential facilities within the U.S. nuclear weapons complex are shut down and cannot reopen readily; Russia's continue to operate."[95]

The third problem area relates to U.S. nuclear declaratory policy and the nature of nuclear weapons in a warfighting environment. A principal problem with using conventional weapons to deter the use of weapons of mass destruction is that conventional weapons are (with some exceptions), on a per-weapon basis, inherently less destructive. NFU opponents argue that "the very reason that arms control advocates would like conventional weapons to replace nuclear weapons in the role of deterrence is the same reason that they are likely to fail in such a role. For a conventional retaliatory force to have any credibility vis-à-vis threats from weapons of mass destruction, it would probably have to be a large scale force, on the order of Operation Desert Storm."[96]

Thus, NFU opponents would rather posture a deterrence regime that is ordered in the following manner:

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[94] Ivo H. Daalder, "What Vision for the Nuclear Future?" in Lexis Nexis (The Washington Quarterly, Center for Strategic and International Studies and the Massachusetts Institute of Technology), Spring 1995.
[95] Kathleen Bailey, "Why We Need to Keep the Bomb," in Lexis Nexis (Information Access Company, Educational Foundation for Nuclear Science, Bulletin of Atomic Scientists), January 1995.
[96] Ibid.

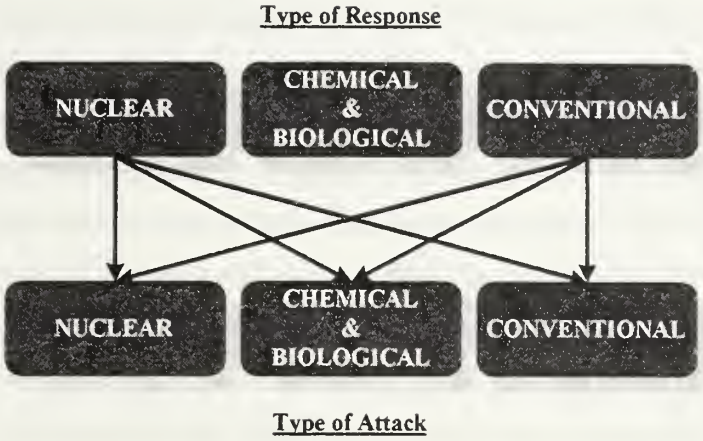

Figure 2.2 NFU Opponent Response Spectrum

This way, while the United States would continue to be a steadfast advocate of the elimination of chemical and biological weapons, potential aggressors would never be able to discount a nuclear response in the face of either WMD or conventional aggression against the United States and its NATO Allies. Negative assurances notwithstanding, NFU opponents believe that the only way to credibly deter WMD employment by proliferants is through nuclear deterrence.

2. Internal Proliferation: U.S. Nuclear Weapons and NATO Europe

NATO officials today continue to reaffirm the value that U.S. nuclear weapons stationed in Europe have in discouraging nuclear proliferation internal to the Alliance. From the outset, it certainly should be said that all NATO countries have signed the NPT in full faith and therefore are legally obliged to abide by this international norm. At the same time, however, several key factors should be noted. First, accession to the NPT treaty does not prevent a withdrawal in the case of national security concerns. The treaty regime is only as secure as the signatory countries feel themselves to be. In Germany, for example, during the negotiations on the NPT in the late 1960s, there was initially fervent opposition to the treaty. "Germany's former Defense Minister Franz-Jozef Strauss argued at the time that the NPT would be the equivalent of a 'new Versailles of cosmic dimension.'"[97] As one German government official forecast early in 1992: "By 2000, either we are comfortably part of a strong EC nuclear reassurance or our feeling of isolation will propel us toward our own capability."[98] Walter Slocombe, Under Secretary of Defense for Policy in the Clinton Administration, wrote in 1992 that "a unified Germany would not readily

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[97] Strauss cited in Peter Van Ham. Managing Non-Proliferation Regimes in the 1990s. New York: Council on Foreign Relations Press (Published in North America for The Royal Institute of International Affairs), 1994, p. 71.
[98] Ibid., p. 71.

rely indefinitely on a British or French deterrent. The practical issue, therefore, is whether there will be U.S. nuclear weapons in Europe—or German ones. So long as there is a reluctance to see German nuclear weapons, there will be a strong case for an American nuclear guarantee made manifest by the presence of nuclear weapons nearby."[99] In other words, it is not credible to assume that Germany will remain a non-nuclear weapons state simply because it is an NPT signatory. Other factors may influence its decision to remain a non-nuclear weapons state.

Second, several U.S. Allies already have the technological capability to produce nuclear weapons, but have refrained from doing so because of U.S. nuclear guarantees. Some of these countries, most notably Germany, are believed to have the capacity to produce nuclear weapons in a matter of months. "Given their industrial capabilities, technological expertise, financial strength, organizational capacity, and military sophistication, U.S. policy makers would do well to think of these Allies as 'virtual' nuclear powers. The only thing standing in the way of their acquiring an actual nuclear arsenal is their decision not to do so."[100] Political intentions aside, if the need ever arises to acquire these weapons, there will always be *de jure* and *de facto* ways of doing so.

A third consideration involves U.S. intentions to make good on promises to defend European Allies with nuclear weapons. "The incentives U.S. allies have to acquire independent WMD capabilities is inversely related to U.S. willingness to use its nuclear capabilities on their behalf."[101] Evaluating the *will* of the United States to fulfill its security commitments is a subjective process. The United States tends to assure its Allies through a variety of means, including official policy statements and ongoing nuclear dialogue and consultation within the Atlantic Alliance. The credibility of U.S. commitments has been the subject of endless debates and controversies. One thing is certain, however. The credibility of these commitments is subject to erosion. Therefore, credibility takes continued work and a conscious effort to influence the perceptions of Allies and opponents alike.

Finally, the *ability* to meet defense and security obligations is a function of the number of reliable nuclear weapons that the United States has. Whether those weapons must be stationed in Europe is debatable and is discussed elsewhere in this work. However, various factors may threaten the U.S. ability to perform the deterrent task in the future: (1) the impact of a CTBT

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[99] Walter B. Slocombe, "The Future of U.S. Nuclear Weapons in a Restructured World," in Patrick J. Garrity and Steven A. Maarenen, eds., Nuclear Weapons in the Changing World: Perspectives from Europe, Asia, and North America. New York: Plenum Press, 1992, p. 63.

[100] Marc Dean Millot, "Facing the Emerging Reality of Regional Nuclear Adversaries," Lexis Nexis (The Washington Quarterly, Center for Strategic and International Studies and the Massachusetts Institute of Technology), Summer 1994.

[101] David Gompert, Kenneth Watman, and Dean Wilkening, "Nuclear First Use Revisited," p. 39.

regime; (2) numerous questions surrounding the Stockpile Stewardship and Management Program (SSMP); (3) the age of the U.S. nuclear arsenal; and (4) the fact that the U.S. reportedly deploys only one warhead variant in Europe, the B-61 gravity bomb. Officials familiar with the U.S. stockpile stewardship program point to an ironic consequence of a CTBT, namely, "the potential for an increased risk of proliferation of nuclear weapons among nations that once relied upon the U.S. nuclear umbrella for their security but may in fact lose confidence in U.S. security guarantees under an extended regime of no U.S. nuclear testing."[102] Thus the CTBT and its dynamic contain a curious paradox. Dr. Christoph Bluth writes that "the comprehensive test ban is one in a series of international accords in progress designed not only to prevent the proliferation of nuclear-weapon technology but also to constrain the development of existing arsenals and ultimately compel a move toward nuclear disarmament."[103] This entire network of agreements embodies a central contradiction:

> It is understood by most people that, in the very long term, nuclear arsenals cannot be maintained on the basis of such agreements. While the reliability of nuclear stockpiles can be taken for granted for a number of decades without testing, eventually full-scale testing will become necessary. Furthermore, a state will be unable to maintain the practical expertise needed to ensure the reliability of its weapons without testing.[104]

To summarize, there are long-term questions regarding the viability of the U.S. nuclear stockpile under a zero-threshold CTBT and, by extension, the same questions apply to the U.S. nuclear umbrella. The willingness of European NATO Allies to remain non-nuclear weapon states (Germany in particular) will depend, to a large degree, on their confidence in the U.S. nuclear guarantee.

In the end, as Josef Joffe writes, "it was only the virtually permanent intrusion of the United States that changed the terms of state interaction to the point where the Europeans no longer had to conduct their business in the brooding shadow of violence... By committing its [nuclear] power to the protection of Western Europe as well as itself against the Soviets, the United States swept aside the rules of the self-help game that had governed and regularly brought grief to Europe in centuries past."[105] Few would doubt that U.S. intervention in Europe during

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[102] "The Clinton Administration and Nuclear Weapons Policy: Benign Neglect or Erosion by Design?" Prepared by the House Armed Services Committee Republican Staff, September 21, 1993. For an extensive discussion of the problems and limitations of SSMP and stockpile stewardship, please see Option #1.

[103] Christoph Bluth, "Future of Test Ban Treaty in Doubt," in Jane's Intelligence Review, Vol. 8, No. 6, June 1996, p. 282.

[104] Ibid., p. 282.

[105] Josef Joffe, The Limited Partnership: Europe, the United States, and the Burdens of Alliance. Cambridge: Ballinger, 1987, p. 183.

periods of world war, and subsequent nuclear commitments to NATO Allies served to mitigate the turbulent characteristics of that region as well as forestall the acquisition of nuclear weapons by NATO non-nuclear weapons states. Stephen Walt bluntly states that "America's global presence helps safeguard its Allies from one another"; they can concentrate on balancing external threats "because they do not need to worry about other threats—that is, threats internal to the U.S.-led alliance."[106] Whether these same U.S. nuclear weapons are effective in preventing external proliferation and WMD use is a different question, however.

3. External Proliferation and NATO's Nuclear Posture

The applicability of NATO's nuclear forces to non- and counter-proliferation efforts has been the subject of much debate. Once again, the United States and its Allies find themselves faced with a dilemma: is relying on nuclear weapons to defend against WMD threats in fact a counterproductive policy because of its potential to encourage proliferation by sustaining the value of nuclear weapons as tools of policy and coercion?

a. NATO Official Declaratory Policy.

During the January 1994 Brussels Summit, NATO heads of state and government participating in the meeting of the North Atlantic Council (NAC) officially recognized the threat of proliferation of WMD. The council's declaration affirmed that the "proliferation of weapons of mass destruction and their delivery means constitutes a threat to international security and is a matter of concern to NATO."[107] Subsequent statements elevated the nature of the threat posed by proliferation. In November 1995 NATO underscored the military threat posed to the Alliance: "the security challenges and risks which NATO faces now are different in nature from what they were in the past—they are multi-faceted, multi-directional, and hard to predict and assess. Proliferation of nuclear, biological, and chemical weapons poses a military risk to the Alliance and can lead to direct military threats. Proliferation must be taken into account in order to maintain NATO's ability to safeguard the security of its member states and to carry out new missions."[108] Gregory Schulte, Chairman of the NPG Staff Group, has characterized the inherently difficult nature of the proliferation threat. "Once in possession of such weapons, even

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[106] Stephen Walt, "The Case for Finite Containment: Analyzing U.S. Grand Strategy," in International Security, Vol. 14, No. 1, Summer 1989, p. 39.

[107] Declaration of the Heads of State and Government participating in the Meeting of the North Atlantic Council held at NATO Headquarters, Brussels, January 10-11, 1994.

[108] NATO's Response to Proliferation of Weapons of Mass Destruction, Press Release (95) 124, NATO Press Service, November 29, 1995.

in small numbers, a hostile country may see them as a means to restrict the freedom of action in the Alliance or its member states. A rogue government may perceive WMD as political weapons that can be used for coercion. It may also perceive them as military weapons whose use, even on a limited scale, might help to compensate for NATO's superiority in conventional forces and technology."[109] Thus, as Schulte writes, "the calculus of deterrence will inevitably differ from that which became so familiar during the Cold War." Due to the inability to reliably understand the dynamics of these new deterrent relationships, and due to the asymmetry of forces problem, NATO has chosen to rely on a policy of deterrence through denial. Within this policy, nuclear deterrence is noticeably absent from the *core capabilities* studied and suggested by NATO's Senior Defense Group on Proliferation (DGP):

- Strategic and operational intelligence
- Automated and deployable command, control, and communications
- Wide area ground surveillance
- Stand-off/point biological and chemical agent detection, identification, and warning
- Extended air defenses, including tactical ballistic missile defense for deployed forces
- Individual protective equipment for deployed forces.[110]

NATO's nuclear forces are certainly affirmed in their enduring role of "making the risks of any aggression incalculable and unacceptable." Yet, as one observer has recently written, "the sad fact is that extended deterrence—the ability of the U.S. nuclear force to protect its Allies—is dead. Washington's public hand-wringing about using nuclear weapons to defend states hosting U.S. forces has already undermined the credibility of the deterrent."[111] While NATO and the United States continue to make official policy statements regarding the value of nuclear deterrence vis-à-vis WMD proliferators, it seems increasingly apparent that instead, NATO has chosen to rely on deterrence through denial.

b. Deterrence Through Denial.

The reliance on deterrence through denial stems from the quandaries involved with threatening to use NATO's nuclear weapons against WMD proliferants. Alliance leaders

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[109] Gregory L. Schulte, "Responding to Proliferation: NATO's Role," in NATO Review, WEB Edition, Vol. 43, No. 4, July 1995.
[110] NATO's Response to Proliferation of Weapons of Mass Destruction, NATO Basic Factsheet No. 8, WEB Edition, May 1995.
[111] Seth Cropsey, "The Only Credible Deterrent," in Foreign Affairs, Vol. 73, No. 2, March/April 1994, p. 15.

seem to have re-evaluated the long-standing and fundamental assumptions of deterrence and found that the principal concept of the past—deterrence based on the threat of retaliation and punishment—is likely to be less relevant in a regional conflict involving weapons of mass destruction. In this type of conflict, interests are not likely to be symmetrical and the conditions for stable deterrence seem to be problematic at best.[112] "The threat of a nuclear response to deter WMD use against NATO forces will simply not be credible in all cases."[113]

Furthermore, as Michael Rühle has pointed out, "...NATO, given its democratic, multinational, and defensive nature, is incapable of any deliberately planned offensive action ... it is simply inconceivable that NATO Allies would find the political will to launch a preventive military strike even against the facilities of a state which persisted in its development of WMD in light of international opposition."[114] Instead, many officials now seem to believe that the future rests in deterrence through denial. This requires the Alliance to have a "balanced mix of active defense, passive defense and [conventional] response capabilities, supported by good intelligence and effective command and control."[115] A more muscular nuclear posture is no longer seen as an effective means of preventing nuclear proliferation and use. To be sure, the nuclear forces of the Alliance will retain an existential deterrent role. However, "deterrence through denial seems to be a stronger foundation for NATO policy than the concept of massive [and nuclear] retaliation which, under a wide range of circumstances, would be perceived as disproportionate or otherwise inappropriate by the Alliance in times of conflict." Additionally, experts argue that "these enhanced conventional capabilities will provide the best hedge against deterrence failure, allowing NATO forces to operate effectively in a WMD environment."[116] While NATO's military posture has not completely dismissed nuclear deterrence vis-à-vis potential proliferants, it does recognize that new proliferators may not be susceptible to the deterrence policies developed during the Cold War.

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[112] Robert Joseph, "Proliferation, Counter-Proliferation and NATO," in Survival, Vol. 38, No. 1, Spring 1996, p. 127.
[113] Ibid., p. 127.
[114] Michael Rühle, "NATO and the Coming Proliferation Threat," in Comparative Strategy, Vol 13, July-September 1994, pp. 317-18.
[115] Gregory L. Schulte, "Responding to Proliferation: NATO's Role."
[116] Robert Joseph, "Proliferation, Counter-Proliferation and NATO," p. 127.

c. *The Nature of the WMD Threat*

Although NATO has apparently chosen to rely less on the value of nuclear weapons, this is not the case for its potential enemies. As Pierre Hassner, a French international affairs expert, has written,

> I do not believe at all that nuclear weapons have been delegitimized in the eyes of Pakistan, of Iran, [or in the eyes] of the various potential proliferators. I believe that the conventional idea according to which all that is because we are not setting the right example is purely illusory [sic]. In my opinion anyone who believes that, if nuclear disarmament by the major powers went faster, that would dissuade Mr. Saddam Hussein or the governments of Iran or Pakistan from trying to procure nuclear weapons would, as Dr. Johnson said, believe anything.[117]

Neither do most potential proliferators have the same perspective as most Western democracies have. As Abu Abbas, the leader of the Palestine Liberation Front said in reacting to "the U.S. attack on Iraq" during the Gulf War: "Revenge takes forty years; if not my son, then the son of my son will kill you. Someday we will have missiles that can reach New York."[118] The incentives for proliferants to obtain weapons of mass destruction are not limited to individual outbursts but are widespread and numerous. For example, Libya's leader, Col. Quadhafi, in an address on Libyan television, asserted that

> we would like to thank the Israelis and the Americans and the entire Western Alliance for having provided the Arabs with the excuse and justification to manufacture the nuclear bomb—if they can—openly, as such a move will be regarded as being justified and for the sake of peace and in accordance with Article 51 of the UN charter. The Arabs must get their money together and make a nuclear bomb openly for the sake of peace. There must be a balance of power in weapons of mass destruction in the Middle East region.... So, time is being lost, but thanks to God, we now have a solution from the nuclear Non-Proliferation Treaty. Those Arabs who can make nuclear weapons can make them, and America cannot strike them or attack them, because if it does so they [the Arabs] will attack the Israelis, the Israeli nuclear reactor in Dimona.[119]

Proliferators do not view the utility of nuclear weapons, nor the restrictions on acquiring them, in the same manner as the United States and its NATO Allies. According to David Kay, "the nuclear weapons program [in Iraq] had for ten years before the war involved a large clandestine effort—approximately $8-10 billion, more than 20 sites, and more than 15,000

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[117] Pierre Hasner, "Responses," in Serge Sur, ed., Nuclear Deterrence: Problems and Perspectives in the 1990's. New York and Geneva: United Nations Institute for Disarmament Research, 1993, p. 158.
[118] Abu Abbas quoted in William E. Burrows and Robert Windrem. Critical Mass: The Dangerous Race for Superweapons in a Fragmenting World. New York: Simon & Schuster, 1994, p. 13.
[119] Qadhafi address on Libyan TV, Tripoli, as reported in the BBC Summary of World Broadcasts in Lexis Nexis (The British Broadcasting Corporation), May 18, 1995.

people pursuing multiple routes to enrich uranium, directed toward producing nuclear weapons. Of the 25 major nuclear facilities now identified in pre-Gulf War Iraq, only six were known at the time the war broke out."[120] In addition, the chemical and biological weapons program was of astounding scope, and included weaponized agents and warheads.

d. Deterrence and the United States

Finally, the discussion of U.S. and NATO nuclear forces and their role in deterring proliferation (acquisition and use) would not be complete without examining current ambiguities in the policy debate in the United States. "Until recently, little attention has been paid to the possibility that the United States might be deterred from projecting power by a new nuclear state, despite its nuclear preponderance. In 1992, however, Les Aspin, then-chair of the House Committee on Armed Services, voiced a new realization: Nuclear weapons still serve the same purpose—as a great equalizer. But it is the United States that is now the potential 'equalizee.'"[121] Increasingly, the awareness of asymmetries of interest and determination might lead the United States to abandon its nuclear security guarantees in the face of a relatively small nuclear arsenal, despite overwhelming U.S. nuclear superiority and a carefully articulated strategy of escalation dominance and flexible response. In fact, there is evidence that affords credibility to the existence of this dilemma. In *The Day After*, a study incorporating exercise scenarios on nuclear proliferation conducted by RAND corporation, "all exercises revealed a strong tendency for the U.S. to turn toward greater reliance on conventional means to extend military security guarantees to friends and Allies. Many believed that it is militarily, politically, and morally counterproductive, and for the foreseeable future, probably unnecessary to base extended deterrence too heavily on nuclear guarantees even in the face of possible nuclear provocation by an opposing regional nuclear power."[122]

During the Cold War, the United States and its NATO Allies, as well as their adversary, the Soviet Union, came to realize that several elements are required to establish an effective deterrent regime:

- The identity of the adversary threatening nuclear use must be known.

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[120] David Kay, "Iraq and Beyond: Understanding the Threat of Weapons Proliferation."
[121] Eric H. Arnett, "Deterrence After Nuclear Proliferation: Implications for Nuclear Forces and Defense Spending," in The Nonproliferation Review, Winter 1994, p. 10.
[122] Marc Dean Millot, Roger Molander, and Peter A. Wilson. "The Day After..." Study: Nuclear Proliferation in the Post-Cold War World. Volume I, Summary Report. Santa Monica: RAND Corporation, 1993, p. 16.

- The adversary should be rational—that is, it should make decisions based on a reasonable calculation of the expected costs and benefits associated with a specific course of action.
- The nature of the behavior to be deterred and the commitment to punish the transgressor (or deny its aims) should be carefully defined and clearly communicated by the United States.
- The adversary must believe that the United States possesses both the means and the resolve to carry out its deterrent threat.[123]

Due to the perceived absence of some (or all) of these elements, the United States (and its NATO Allies) have eschewed deterrence by punishment and emphasized deterrence by denial with respect to WMD proliferation. The results of this apparent policy change are not presently clear. However, it seems to indicate that the United States and its Allies would prefer to minimize reliance on nuclear weapons to deter the acquisition and use of weapons of mass destruction by proliferants. Instead, the Atlantic Alliance is attempting to prevent WMD acquisition and use mainly by improving its conventional response capabilities.

4. Conclusions: Enduring Ambiguities

The United States and its NATO Allies face an uncertain future with respect to WMD proliferation. As it stands today, United States and NATO declaratory policy (with respect to WMD proliferation and the use of WMD) seems to follow the following pattern:

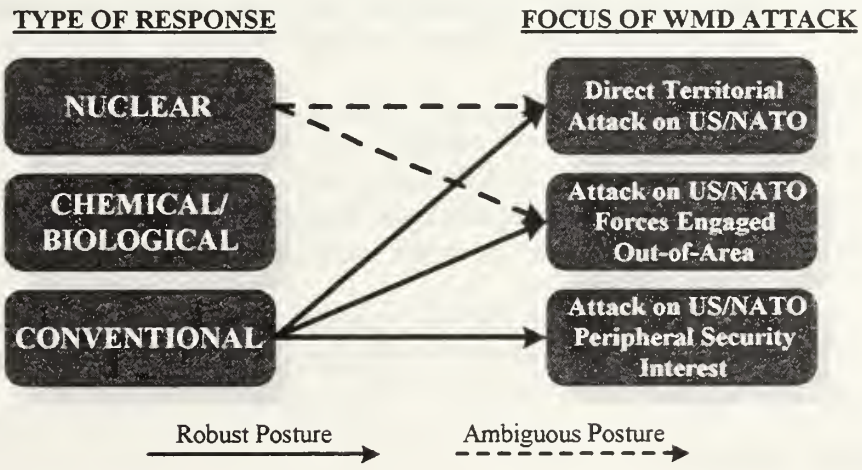

Figure 2.3 NATO's Response Spectrum Today

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[123] Michele A. Flournoy, "Implications for U.S. Military Strategy," in New Nuclear Nations: Consequences for U.S. Policy. Robert D. Blackwill and Albert Carnesale eds. New York: Council on Foreign Relations Press, 1993, p. 142.

While nuclear weapons continue to fulfill some existential role in deterrence, "the possession of limited substrategic nuclear forces by NATO will not *ipso facto* enable the Alliance to confront successfully the potentially serious threats to the alliance's vital interests and objectives."[124] As David Yost writes, "in practice, it is clear, the strong preference of the United States and the other Allies would be to avoid using nuclear weapons and to rely on conventional forces."[125]

Nuclear weapons, though physically stationed in NATO Europe, seem to occupy an increasingly obscure role with respect to deterring proliferants. It obviously is not perceived to be in the interest of the Western countries to frequently tout the threat of nuclear employment against other states on their periphery. The ability of the United States and NATO to effectively react to future challenges depends in part on whether the Alliance can resolve the enduring ambiguities in its nuclear posture.

C. KEY FINDINGS

Russian Nuclear Weapons

- **Nuclear weapons are likely to play an increasing role in the rhetoric, operational capabilities, and doctrine of Russian military power.**

- **Russian tactical nuclear weapons pose a threat to NATO and the United States due to:**
  - **the risk of premature weapons release by Russian commanders during times of tension (as a result of pre-delegation of nuclear launch codes and authority)**
  - **the Russian doctrinal emphasis on lowering the nuclear threshold to the tactical, theater, war-fighting level**
  - **the risk of a crisis in the Russian nuclear infrastructure as a result of**
    - **overwhelming stockpile stewardship demands**
    - **the lack of adequate weapons storage facilities and security measures**
    - **the risk of theft or sabotage directed against Russian tactical nuclear weapons by terrorists, arms traffickers, or proliferants.**

WMD Proliferation

- **Nuclear declaratory doctrine does not seem to deter the acquisition of WMD by states with interests inimical to the United States and NATO.**

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[124] Thomas-Durell Young, NATO's Stubstrategic Nuclear Forces and Strategy: Where Do We Go From Here? Strategic Studies Institute, U.S. Army War College, January 13, 1992, p. 15.
[125] David S Yost, U.S. Nuclear Weapons in Europe: Prospects and Priorities, p. 21.

- **Nuclear declaratory doctrine might play a role in deterring WMD employment by adversarial states or actors.**

- **However, it is impossible to prove conclusively that these weapons adequately fulfill either role.**

- **The receding role of nuclear weapons in Alliance doctrine and policy, combined with NATO's clear preference for conventional military power, is fostering doubt as to the willingness of the Alliance to posture and employ nuclear weapons.**

III. NUCLEAR PERCEPTIONS IN THE ATLANTIC ALLIANCE

A. INTRODUCTION

In NATO's history, few topics have received as much attention as the Alliance's nuclear strategy. The Multilateral Force, Massive Retaliation, Flexible Response, firebreaks, dual key, dual-track, and other issues in Alliance nuclear strategy have historically sparked substantial private and public debates. However, since the 1991 publication of the Alliance's New Strategic Concept, NATO has adopted a more subdued approach to nuclear weapons. Furthermore, the collapse of the Soviet Union and the easing of tensions in Europe have allowed NATO countries to de-emphasize the role of nuclear weapons in Alliance politics and rhetoric.

In order to evaluate the future of U.S. nuclear weapons in Europe, this chapter examines current nuclear trends in the Alliance. Specifically, it explores the nuclear postures and attitudes of three countries at the Alliance's West European core—Britain, Germany and France—and three countries on NATO's Southern flank—Italy, Greece, and Turkey. Key issues for illumination include:

- the present nuclear posture of the country under study;
- the extent to which the countries surveyed consider U.S. nuclear guarantees important;
- the extent to which the countries consider the physical presence of U.S. nuclear forces on European soil a necessary element of deterrence.

B. BRITAIN-GERMANY-FRANCE

1. Britain

a. Nuclear Posture

The British government has traditionally maintained a policy of "minimum nuclear deterrence". This policy essentially mandates a nuclear arsenal with little redundancy that will be maintained at the minimum level necessary for U.K. (and NATO) deterrent needs.[1] Today, this force is comprised of *Tornado* DCAs armed with nuclear gravity bombs (the WE-177) and *Polaris* as well as *Trident* nuclear submarines (SSBNs) bearing submarine-launched ballistic missiles (SLBMs).[2]

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[1] United Kingdom. Government Press Release. Ministry of Defence. "Reduction in Britain's Nuclear Weapons." 15 June 1992.

[2] Stockholm International Peace Research Institute (SIPRI). SIPRI Yearbook 1994. Oxford University Press. 1994, p.298. The Polaris force is slated to be replaced by four Trident submarines of the Vanguard

In April 1995, Nicholas Soames, the Armed Forces Minister, announced that the WE-177 would be withdrawn from service by the end of 1998. The Ministry of Defence had previously planned to keep the capability until 2007. The decision to bring forward the scrapping of the WE-177 was part of the Government's attempt "to show good faith" in meeting its obligations under the Nuclear Non-Proliferation Treaty, which was extended later that year.[3]

In June 1995 the UK briefed NATO's Nuclear Planning Group (NPG) on the decision to use single warhead SLBMs launched from *Trident* SSBNs in the substrategic role.[4] In June 1996 David Omand of the British MOD explained the operational aspects of the substrategic Trident as follows:

> Only with four submarines can we expect to be able to maintain, even while allowing for essential maintenance periods, crew changes and training, and refits, at least one boat at sea on continuous strategic patrol and another available, at a realistic level of readiness, to deploy to sea with missiles in support of our strategic deterrent and available for substrategic use.[5]

The two boat concept--one strategic and one sub-strategic--will theoretically allow the British to undertake a substrategic strike without compromising the location, and hence, the survivability of the "strategic" boat.

A British nuclear expert, David Miller, writing in a recent issue of *Jane's International Defense Review*, identified four potential "uses" for sub-strategic *Trident*:

- "upper end" of the usage spectrum in a major conflict to respond in kind to an enemy nuclear strike;
- use in a similar setting but as a response to a strike involving chemical or biological weapons;
- in a "demonstrative role" against a non-critical or uninhabited area in order to send a message threatening future strikes on higher value targets;[6]
- "a punitive role" in which "a country has committed an act, despite specific warnings that to do so would incur a nuclear strike."[7]

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class. Three of these boats are already in service, and the fourth, according to the Ministry of Defense, should be in service by 1998.

[3] Michael Evans. "RAF to lose nuclear role after 42 years on the front line." The Times: 5 April 1995: Home News section.

[4] NATO. "Final Communiqué: The Defence Planning Committee and the Nuclear Planning Group of NATO." Press Communiqué M-DPC/NPG-1(95)57. Brussels: 8 June 1995.

[5] David Omand, "Nuclear Deterrence in a Changing World: The View from a UK Perspective," RUSI Journal, June 1996, p. 20.

[6] See also, Malcolm Rifkind. Speech by the Secretary of State for Defence to the Center for Defence Studies, King's College, London, 16 November 1993: para. #31.

[7] David Miller. "Britain Ponders Single Warhead Option." International Defense Review. 1 September, 1994. Volume 27: Number 9. p.45+.

Even in its pared-down form, the future British nuclear force should be capable of performing the above-mentioned tasks. By the early years of the next century this force will consist solely of down-loaded *Trident* missiles.[8] If the UK is to remain a nuclear-weapon state, it should not be difficult to defend this force level as a reasonable minimum. Nor is it likely that the UK's continuing nuclear status will be seriously questioned due to domestic constraints. "The fact that the bulk of the money for *Trident* has already been spent or committed, combined with the apparent electoral unpopularity of proposals to give up the nuclear deterrent, should ensure that none of the main political parties sees advantage in advocating unilateral nuclear renunciation" in the near future.[9]

b. The Importance of U.S. Guarantees

In a 1993 speech commenting on (among other subjects) the post-Cold War European security environment, then British Defense Secretary, Malcolm Rifkind noted, that it is clear the end of the Cold War has not brought international stability, but the world is, in fact, less stable.[10] In an earlier speech, Rifkind elaborated on this point as follows:

> Nationalism, ethnocentrism and intolerance are throw-backs to a darker age, but they now seem to be growing again, producing new tensions within and between states. The fear of East/West engagement which previously led the superpowers to inhibit conflict between states does so no longer. Even in the West, the relaxation of tension has increased the possibility of the renationalization of defence, by which we mean a diminishing of commitment to collective security and a reemergence of purely national policies.[11]

In this environment, an unambiguous U.S. commitment to European security is one element which might help to counter such trends. In a more recent speech (as Britain's Foreign Secretary) Rifkind remarked, "Europe as a whole will benefit from the strongest transatlantic ties...[t]he costs of transatlantic divergence have been most clear in former Yugoslavia. For too long differences of perspective and policy among the Western Allies weakened the international effort to bring peace. Conversely we have seen...what can be achieved if the Europeans and the U.S...are pulling together."[12]

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[8] The British have chosen to mount less than the 8 warheads per missile that each can carry. Some reconstitution capability will probably be retained.

[9] Nicholas K.J. Witney. "British Nuclear Policy After the Cold War." Survival. Winter 1994-1995: p.104.

[10] Malcolm Rifkind. Speech by the Secretary of State for Defence at Chatham House, 16 December, 1993: para. #8.

[11] Malcolm Rifkind. Speech by the Secretary of State for Defence to the Center for Defence Studies, King's College, London, 16 November, 1993: para. #8.

[12] Malcolm Rifkind. Speech by the Secretary of State for Defence to the Atlantic Council of the United Kingdom, Bath, Thursday, 2 November 1995. p 3.

Acknowledging that the nature of the threat to NATO Europe may have changed, while the central role of the Atlantic Alliance as the guarantor of European security has not, Rifkind states, "We cannot ignore the fundamental threat of a direct attack on an Alliance member. The circumstances of such aggression against a NATO Ally may be very different from those of the Cold War, but the principle of collective security is the same."[13]

Further emphasizing the importance of the military and political contribution of the U.S. to the Atlantic Alliance in the same speech, Rifkind stated, "...[A] European security system without direct U.S. engagement would be neither credible nor effective [and] in political terms too, American clout remains invaluable."[14] More specifically, Rifkind points out, "The American nuclear guarantee to the Alliance remains of fundamental importance to our collective security."[15] Clearly officials at the highest levels of the British government consider America's pledge to employ its strategic nuclear arsenal in the defense of NATO-Europe vital to the maintenance of European security.

A key aspect of this American pledge is the link established between the U.S. and Europe through the basing of U.S. nonstrategic nuclear forces (NSNF) in Europe. According to the 1991 NATO Strategic Concept, "Nuclear forces based in Europe and committed to NATO provide an essential political and military link between the European and the North American members of the Alliance."[16] The credibility of this link and the necessity of maintaining U.S. nuclear forces in Europe will be explored from the British perspective in the next section.

It should first be recalled, however, that Britain has depended heavily on the United States to support the British nuclear arsenal. "Close cooperation since at least 1958 has enabled London and Washington to share research, technology and facilities, thus reducing costs for Britain substantially while allowing the U.S. benefits from British research and development."[17] This nuclear component of the U.S.-U.K. special relationship serves to further highlight the British need for an unwavering U.S. interest and participation in European (and,

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[13] Rifkind, 16 December, 1993, para. #14.
[14] Rifkind, 2 November, 1995. p.4.
[15] Rifkind, 16 November, 1993. para. #16.
[16] NATO. NATO Handbook. NATO Office of Information and Press. Brussels: 1995, p.247. The Alliance's Strategic Concept, 1991, para. 56.
[17] Steven Kramer and C. Richard Nelson. "Nuclear Weapons and European Security." Washington D.C.: The Atlantic Council of the United States. 1996, p.25.

critically, Britain's) nuclear affairs. Considering the disparate nature of the contributions, Britain would in all likelihood have more to lose from a termination of this relationship than the U.S.[18]

c. *Importance of a U.S. Nuclear Presence in Europe*

Again, Mr. Rifkind speaks eloquently on this subject for the British Government. He has indicated that there is no substitute for the "deterrent capacity of the United States."[19] Further, he implies that this capacity is made *more credible* by the presence of U.S. nuclear forces on European soil. Rifkind does not see "...conventional forces alone, either European or American, as providing the same degree of assurance as current Alliance strategy." Furthermore, he believes that the current Alliance strategy is "more effective because of the linkage—central to the Alliance's nuclear posture—with the strategic power of the United States."[20]

According to an unclassified media source, "The U.S. has about 480 nuclear bombs at 15 European bases. They are different variants of the B-61 tactical nuclear bomb, with yields between one and 175 kilotons."[21] U.S. and European DCAs (primarily Europe-based tactical fighter aircraft) are the delivery platforms for the weapons. Publicly, Rifkind expresses confidence in the U.S. commitment to Europe, despite substantial cuts in the numbers of Europe-based U.S. forces.[22] Although the U.S. forces deployed in Europe today are modest by Cold War standards, Rifkind nevertheless expresses the British government's confidence that the U.S. forces are sufficient to maintain extended deterrence in the present European security environment. He says, "We can sustain a credible posture with fewer systems and lower numbers. [Additionally,] in today's circumstances, deterrence can operate quite adequately without multiple overkill and a hair-trigger system of reaction." Even with such a reduced posture, the NATO strategy "makes military recidivism by any future Russian leadership a pointless option for them. It is therefore in the interest both of the Allies and Russia, as well as the other states of the former Soviet Union."[23]

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[18] The U.S. provides the testing, major research, and missile system production facilities compared to British contribution of some research capabilities and warhead production only for British systems. The British build their own SSBNs and participate in a complex arrangement for the use of *Trident II* (D5) SLBMs.

[19] Rifkind. 16 December, 1993, para. 24. In para. 30 of this speech, Mr. Rifkind comments on the importance of "the presence of American troops in Europe which gives substance to these links." It is reasonable to infer that Mr. Rifkind also attaches importance to U.S. forward deployed nuclear forces as a subset of this U.S. force posture.

[20] Rifkind. "Extending Deterrence?", --contribution to a colloquium on strategic issues, Paris, 30 September 1992. Text provided by the British Ministry of Defense, both quotes come from paragraph 5 of the text.

[21] Andrew Marshall. "Spirit of Treaty 'is being broken'." The Independent 19 April 1995, International sec.: p.10.

[22] Rifkind, 30 September, 1992, p.6.

[23] Ibid., p.5.

2. Germany

a. The Importance of the U.S. Nuclear Guarantee

During the Cold War, West German politicians—except for some members of the *SPD* who considered the Soviet threat little more than a figment of the collective Western Cold War imagination—and defense specialists alike "...remain[ed] convinced of the Federal Republic's dependence on the American strategic nuclear guarantee for security."[24] In 1984 German defense expert Josef Joffe observed, "Living under the umbrella of the American security guarantee, they [the West Europeans] enjoy a collective good they cannot produce themselves, or if they could, only at vastly higher prices than currently borne by the United States."[25] "As Georg Leber, then West German defense minister, stated in 1973: 'There is neither a political nor a military nor a psychological substitute for the American commitment [in Western Europe]. No European state could provide it, whether acting alone or with others.' "[26]

More recently, Germany's repeated official commitments to remain a non-nuclear weapon state, most notably stated in the 2 + 4 Treaty,[27] highlight the fact that Germany is *without* nuclear weapons in a world in which nuclear arms still play a significant role. Official statements from those in power in the FRG "point out that Germany as a non-nuclear state will continue to rely heavily on the nuclear protection of the U.S. extended deterrence capabilities."[28] Some German defense experts note that an essential role of the U.S. in European security is to serve as a counterbalance to the power retained by Russia, which has become less immediately threatening, but potentially more unstable.[29] In this context, the continued U.S. nuclear commitment has been characterized by a noted German analyst as a "paid-up insurance policy" that is certainly worth retaining.[30] In Germany's 1994 Defense White Paper, the maintenance of the Atlantic Alliance, particularly a close relationship with the U.S., was mentioned as a "central interest" of German foreign and security policy. The importance of this relationship was based on an acknowledgment

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[24] David S Yost and Thomas C. Glad. "West German Party Politics and Theater Modernization Since 1977." Armed Forces and Society. Summer 1982: p.547.
[25] Josef Joffe. "Europe's American Pacifier." Foreign Policy Spring 1984: p.81.
[26] Ibid.
[27] Chancellor Helmut Kohl." Treaty on the final settlement with respect to Germany, Moscow, 12 September 1990." Quoted in: Rotfeld, Adam Daniel and Walther Stutzle, eds. "Chapter XIX: Documents on unification." Germany and Europe in Transition (New York: Oxford University Press, 1991), p. 184.
[28] Karl-Heinz Kamp . "Germany and the Future of Nuclear Weapons in Europe." Security Dialogue September 1995: p.278.
[29] Holger H. Mey. "View from Germany: A European Security and Defense Identity--What Role for the United States?" Comparative Strategy July-September, 1995: p.313.
[30] This thought comes from a paper written by a German expert, but is not for attribution.

of America's unique position as a world power and the "indispensable" role the U.S. was believed capable of playing in international stability."[31]

However, explicit security threats are not the only justifications Germans use when arguing the need for a continued U.S. commitment to European security. German Defense Minister, Volker Rühe, implying a more general role, recently noted that the Atlantic Alliance remains the strongest link between the "shared values and common interests" of Europe and North America.[32]

b. The Importance of U.S. Nuclear Forces in Europe

During the Cold War, West Germany insisted on a U.S. nuclear *presence* in Europe including the deployment of a substantial number of nuclear weapons on West German soil. This presence was seen as increasing the credibility of the U.S. commitment.[33] West Germany was willing to risk becoming a nuclear battleground in order to deter what could only have been perceived as a greater risk of Soviet invasion. It follows that for West Germany, the Cold War represented something of a high stakes gamble. "For this reason, the credibility of the U.S. guarantee—in terms of capabilities and commitment—[was a] preoccupation of the Federal Republic"[34] throughout the Cold War period.

Although in most official and expert circles in Germany today the stationing of U.S. non-strategic nuclear weapons on German soil is considered desirable, the German public is divided on the subject. This same ambivalence has been recorded in various opinion polls of German citizens on the larger question of the continued need for *any* U.S. presence in Germany.[35] Perhaps it is because of this perceived sensitivity of the German public to nuclear issues (the rancorous INF debate of the 1980's may be at least partially to blame) that few explicit pronouncements on U.S. nuclear weapons based in Germany are heard from official sources.

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[31] Federal Republic of Germany. Federal Ministry of Defense. White Paper 1994 (Abridged Version) April 1994, pp. 7-8.
[32] Volker Rühe, "Shaping Euro-Atlantic Policies." Survival. Summer 1993: p.130.
[33] Kamp, p.279.
[34] Yost and Glad, p.547.
[35] Please see: Catherine Kelleher and Cathleen Fisher. chapter 7: Germany. in Douglas J. Murray and Paul R. Viotti, eds., The Defense Policies of Nations: A Comparative Study, third edition (Baltimore and London: The Johns Hopkins University Press, 1994) p.166 and Asmus, Ronald D. German Strategy and Opinion after the Wall: 1990-1993. Rand: Santa Monica , CA, 1994, p.40-41.

"Thus, German decision makers only rarely proceed beyond very general statements on nuclear issues (e.g., indicating support for an unspecified nuclear presence in Europe)."[36]

Officially, the German government continues to support the deployment of U.S. forces on German soil as evidence of continued U.S. interest in a stable Europe. Commenting on the post-Cold War withdrawal of some of these forces, Defense Minister Rühe pointed out, "The mere fact that U.S. forces are stationed in Europe is more important than the actual numbers involved—as long as they make a significant contribution to Alliance security." He goes on to say, "The presence of U.S. armed forces in Europe continues to be the most visible expression of the strategic link between the two transatlantic pillars. It remains an indispensable source of stability in Europe."[37] Although Mr. Rühe does not specifically mention nuclear forces in this statement, it is reasonable to infer that they can be included as a subset of the overall U.S. forces deployed in Germany.

On a more analytical yet unambiguous level, several knowledgeable Germans have pointed to the continuing necessity for the stationing of U.S. nuclear forces in Germany in order to sustain *extended deterrence*.

> Nonstrategic weapon systems (formerly theater nuclear forces) provide the protector with an additional margin of politico-military freedom of action and thus offer additional, if not essential, credibility to its nuclear commitments. The deployment of these nonstrategic nuclear weapons on the territory being protected demonstrates U.S. willingness to act on its Alliance commitments far better than declaratory statements alone.[38]

As a non-nuclear-weapon state, Germany retains an added interest in the maintenance of U.S. nonstrategic nuclear forces in Germany. By providing infrastructure and delivery systems in support of these forces and influencing policy in NATO forums such as the Nuclear Planning Group (NPG) and the High Level Group (HLG) Germany is able to increase its level of participation and share some of the burdens of maintaining the Alliance's nuclear posture. According to Thomas Enders and other German experts,

> Extended deterrence also requires the willingness of the European non-nuclear states to share the burden, thereby signaling both the protector (the United States) as well as the other nuclear superpowers (particularly an assertive Russia) of the continuing European interest in a U.S. nuclear commitment. Up to now the

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[36] Thomas Enders, Holger H. Mey, and Michael Ruhle. "The New Germany and Nuclear Weapons." Nuclear Weapons in the Changing World: Perspectives from Europe, Asia, and North America, Ed. Patrick J. Garrity and Steven A Maaranen. New York: Plenum Press, 1992, p.128.
[37] Rühe, "Shaping...," p.131.
[38] Enders, et al., p.132.

deployment of nonstrategic weapons in Europe has been seen as the core element of this nuclear risk-sharing.[39]

The presently deployed U.S. DCAs and air-delivered nuclear weapons represent continued U.S. engagement in Europe, which German leaders generally desire.[40]

3. France

a. Nuclear Posture

France's "prestrategic" nuclear forces (roughly equivalent to NATO's NSNF) presently include ground-based, short range systems (*Hadès* missiles), and ASMP air-launched missiles on DCAs (primarily *Mirage* 2000Ns and *Super Etendards*)[41] In a February 1996 speech on the restructuring of France's nuclear forces, President Chirac announced his plans to scrap France's land-based SNFs and rely solely on air-delivered systems to perform the prestrategic role.[42]

The SSBN force is the backbone of France's strategic force, which also includes long-range DCAs (*Mirage* IVPs) and IRBMs (S3Ds). France is currently modernizing its submarine fleet with the construction of four *Triomphant* class submarines which will be equipped with M45 SLBMs.[43] In the same announcement mentioned above Chirac indicated the "18 land based nuclear missiles [IRBMs] in silos on the southern Albion plateau would be scrapped"[44] and France would rely mainly on the four planned SSBNs to serve as France's independent strategic nuclear deterrent,[45], complemented by nuclear-armed air-launched missiles

b. The Credibility of U.S. Guarantees and the Importance of Deployed NSNFs

Some French policy statements in the early 1990s relegated NATO (implicitly, NATO's nuclear weapons and the transatlantic link) to a "last-resort insurance policy function for threats beyond the strength of the EC and for which the EC would need U.S. help, such as (for

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[39] Ibid., p.133.
[40] Ibid., pp. 142-143..
[41] David S. Yost. "France." chapter from The Defense Policy of Nations: A Comparative Study. Douglas J. Murray and Paul R. Viotti, eds., third edition (Baltimore and London: The Johns Hopkins University Press, 1994). p.263. and François Heisbourg "French Reactions: Actual, Virtual, and Plausible." IISS. Unpublished manuscript. 1996, p.17.
[42] Ben MacIntyre and Adam Sage. "Chirac pledges to scrap land-based nuclear missiles." The Times of London (Internet Edition). Europe Section. 23 February, 1996 pp. 1-2.
[43] Yost, "France," op. cit..
[44] MacIntyre and Sage, op. cit.
[45]Craig R Whitney. "Chirac Announces Major Changes in French Military." The New York Times (Internet Edition). 23 February, 1996, p.2.

example) aggression by a resurgent neo-authoritarian Russia."[46] Although French leaders have been unwilling to characterize "France's nuclear strategy and policy...[as] a subset of NATO strategy and policy,"[47] the reality is that the U.S. commitment has been the primary guarantee against major war. Astute French leaders have recognized this and have emphasized its importance.

While official French statements regarding the importance of the U.S. commitment to European security abound, the audience often must infer that such statements also apply to U.S. nuclear forces in Europe. The 1994 Defense White Paper points to "the necessary permanence of America's commitment in favor of European security and stability."[48] Continuing along these lines, the White Paper states, France's "highest authorities have never failed to stress the wish of [their] country, linked in friendship as it has always been with the United States, that the American commitment in Europe be maintained."[49] In a recent example of a public declaration to this effect, President Chirac addressed the U.S. Congress on February 1st, 1996:

> Today, as yesterday, the world needs the United States...[Your] political commitment to Europe and military presence on European soil remain an essential factor in the stability and security of the continent...France is ready to take part fully in this process of renovation [of NATO] as witnessed by the announcement a few weeks ago of its rapprochement with the military structures of the organization.[50]

Prime Minister Alain Juppé put it more simply, "The U.S. presence is and will remain essential to our security."[51] U.S. forward-deployed forces are important, among other reasons, because they demonstrate the credibility of the transatlantic nuclear link.

Although clear thinking French decision makers desire a continued U.S. presence on the European security scene, they have traditionally harbored concerns about the long-term viability of such a U.S. stance. According to David Yost,

> The assumption that U.S. nuclear protection is unreliable (or may become so in the long term) has been prominent in France since the 1956 Suez crisis; it became an article of faith shared in various French political circles, in addition to the Gaullists, during the 1960s. An associated view found among many of the French is that the logical solution to declining U.S. military commitments and

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[46] Yost, "France," p. 240.
[47] Ibid., p.248.
[48] France. Ministry of Defense. Defense White Paper. 1994, p.30.
[49] Ibid., p.33.
[50] President Chirac cited in "France' changing view of the world." The Economist. 10 February, 1996: p.47.
[51] Alain Juppé. "Speech delivered by the Prime Minister at the Institut des Hautes Etudes de Defense Nationale." Paris, 7 September, 1995, p.6.

> credibility in Europe is for France to take the lead in building a European defense identity capable of offering nuclear protection to Germany. Part of the French advocacy of a European defense entity has included the argument that, sooner or later, U.S. unreliability will become obvious, and that France's European partners will be grateful to Paris for having built an independent nuclear deterrent force.[52]

In a recent expression of similar concerns, the 1994 White Paper cautions, "Today, though keeping to its commitment, the United States draws inferences from the demise of the Soviet Union and of the Warsaw Pact. It is thus reducing the extent of its presence and gradually assuming a selective approach to Europe's security problems, in terms of a stricter evaluation of its national interests."[53] One French observer noted that French decision makers are aware of a potential "self-fulfilling prophecy" associated with these concerns and, thus, are careful not to speak too loudly or often on such points.[54]

C. ITALY - GREECE - TURKEY

This section investigates the nature of the Alliance's nuclear relationship with Italy, Greece, and Turkey in the following way: first, it explores past and current rationales for the deployment of NSNFs in these countries; next it determines the level of support for this presence by each countries decision makers; and last, it examines the prognosis for the continued presence of U.S. NSNFs in these countries.

1. ITALY

a. The Cold War Period

According to Carlo Jean, an Italian security expert, "Ever since the two major decisions in favor of the Atlantic Alliance and Europe in the late 1940s, Italy's security policy profile has been a very low one....This low profile meant that Italy's [NATO] membership never became an issue during domestic political struggles and allowed Italy to continue as a loyal Alliance member."[55] Jean also points out that this dynamic also prevented Italy from becoming

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[52] David S. Yost. "Nuclear Weapons Issues in France." chapter from Strategic Views from the Second Tier: The Nuclear Weapons Policies of France, Britain, and China. John C. Hopkins and Weixing Hu, eds., (San Diego, California: Institute on Global Conflict and Cooperation, University of California, San Diego, 1994, pp. 57-58. Yost cites Jacques Mellick's statement of 29 January 1992 as an example of this viewpoint.

[53] Ibid., p.32.

[54] These thoughts came out of the authors' discussion with a French nuclear expert on 20 February, 1996, at the Naval Postgraduate School, Monterey, California. The expert wished to remain anonymous.

[55] Carlo Jean, "Italy and its Security Policy," in European Security Policy After the Revolutions of 1989, Jeffrey Simon , ed., (Washington, D.C.: The National Defense University Press, 1991), p. 550.

involved in the formulation of Alliance policy in a manner commensurate with its growing economic and demographic weight.

Italy's fortunate geographic position contributed to its sense of security during the Cold War. Italy shared no borders with the Soviet Union or any of the WTO countries and helped protect the Alliance from the Soviet buildup in the Mediterranean.[56] As part of its responsibilities, Italy played an early and consistent role in the nuclear missions of the Alliance. Under dual key arrangements it provided for the delivery of gravity bombs, missiles, and nuclear artillery rounds.[57] In a transition to high profile moves to support the Alliance, in 1979 Italy agreed to accept the deployment of U.S. intermediate range nuclear forces in Sicily.[58] Italy later offered to host a nuclear-capable U.S. Air Force F-16 Wing that had been transferred from Spain.[59]

Until the very end of the Cold War, Italy's support for the Alliance's nuclear strategy was clear and unequivocal. For example, Carlo Jean wrote in 1991, before the publication of the Alliance's new Strategic Concept:

> Italy participates fully in the system of collective security and the defense within the Atlantic Alliance and actively supports its strategy of flexible response and forward defense. Flexible response is considered the cornerstone of enlarged deterrence and the basis for the American military presence in Europe. For Italy and the other countries of the Southern Region, this situation has particular significance. Sub-strategic nuclear weapons represent not only an essential instrument for ensuring the effectiveness of the NATO deterrence by linking conventional defenses to American strategic weapons, but also constitute the principal means of coupling the various theaters of the Southern Region with Central Europe.[60]

It was in this role of linkage to the Central region that nuclear weapons in Italy could do more than simply deter attack on Italy. During the latter part of the Cold War, Italy took pride in its contribution to the deterrence of an attack along the major East-West axis.[61]

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[56] Marco De Andreis and Gianluca Devoto, "Restructuring Italian Defense," 1995. Course material from NS 3700, Naval Postgraduate School, Monterey, California, 1995. See also, Joseph C. Rallo, "Italy," Chapter from The Defense Policies of Nations: a Comparative Study, Douglas J. Murray and Paul R. Viotti, eds., third edition, (Baltimore and London: The Johns Hopkins University Press), p. 308.

[57] Ivo H. Daalder, The Nature and Practice of Flexible Response NATO Strategy and Theater Nuclear Forces since 1967, (New York: Columbia University Press, 1991), pp. 110-111.

[58] De Andreis, op. cit.

[59] Jean, p. 550.

[60] Jean, p. 552.

[61] Ibid., pp. 552-553.

b. Present and Future

In the post-Cold War period, Italy remains an active member of the Alliance and continues to accept nuclear responsibilities.[62] "Official, post-1989 security perceptions depict Italy as more vulnerable than before, given the tensions coming from both the Balkans and the Mediterranean. On the other hand, concrete risks have yet to materialize:...in the Mediterranean NATO has never enjoyed a clearer superiority...Islamic fundamentalism, despite being on the rise on the North-African coast is still perceived in Rome as a rather remote threat."[63] Nevertheless, numerous projections point to the existence of longer term threats in the region from the proliferation of WMD and ballistic missiles as well as terrorism.[64]

In the future, Italy plans to undertake a threat- and budget-driven reorientation of its force posture that should not, however, affect its nuclear contribution to the Alliance. Its "faith in U.S. support causes Italy to envision considerable reductions" in its conventional forces—though not in it nuclear commitments.[65] Indeed, as a manifestation of this fiscally motivated decision, Italy remains one of the strongest supporters of a continued U.S. military and nuclear presence in Europe.[66] The only factors likely to cause a reversal of Italy's force reductions are either a substantial withdrawal of the U.S. from the Mediterranean or the outbreak of a crisis or conflict in the Mediterranean. Either could accelerate Italian moves toward integration with the rest of Europe.[67]

One aspect of Italy's recent public policy regarding nuclear weapons is of note. Italy's Ambassador to the UN, Francesco Paolo Fulchi, who until 1993 represented Italy in NATO, responded to a question in 1995 regarding the continued existence of nuclear weapons in Italy by saying, "...without a doubt...there were double-key devices, American and Italian...and they have been forgotten."[68] This statement implies that some Italian officials may be growing less comfortable with public discussions of Italy's nuclear role within the Alliance. Nevertheless,

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[62] Italy like, the other members of the Alliance, supported the Alliance's 1991 Strategic Concept and has participated without public dissent in the workings of the DPC and NPG.

[63] Marta Dassù and Marco De Andreis, "International Institutions and European Security: The Italian Debate," 1994, p. 9. Course material from NS 3700, Naval Postgraduate School, Monterey, California, 1995.

[64] Jean, op. cit., p. 555. Jean point out that the threat of missile attack is considered very real in Italy based on the Lampedusa attack in April of 1996, p. 562.

[65] Jean, p. 565.

[66] Rallo, p. 327.

[67] Jean, p. 563.

[68] "UN Ambassador Admits U.S. Nuclear Devices on Territory," Rome ANSAMAIL Database in English, 1739 GMT, 18 April, 1995. FBIS Report.

for the foreseeable future, it seems likely that in its security outlook Italy is likely to remain "pro-NATO, pro-American, and pro-European...."[69]

2. Greece

a. Early Quest for Security

During the 1950's Greece's weakness relative to the Soviet Union and its client states on Greece's northern borders became increasingly clear. "The Greeks had a long and strategically thin northern frontier which they were in no position to defend in the event of a Soviet attack. North of this narrow strip of Greek territory and all the way up to the Baltic Sea, lay the countries of the eastern bloc. Greek statesmen were naturally afraid that their country could be crushed under such geopolitical pressure."[70] It was within NATO that Greece sought security from these threats. NATO provided a territorial guarantee that was, to a significant degree, underwritten by the United States. For its part, Athens agreed to strengthen its armed forces with the help of U.S. military aid and accepted the basing of U.S. conventional as well as nuclear forces on its soil. The storage of tactical nuclear weapons under dual key arrangements meant that Greek forces would play a role in any contemplated use of those weapons.[71] For NATO, the benefit was a stronger Southern Flank and a bulwark against the spread of Communism into the Mediterranean region.

For a time, Greece found these arrangements satisfactory. By successfully deterring what was perceived as a major threat to Greece's continued existence, participation in NATO gave the Greek people confidence in their security, and this allowed them to participate more fully in their country's post-World War II economic recovery.[72] Through the 1950s and 1960s an added benefit in NATO involvement was that it provided a framework for improving relations with Turkey.[73]

b. End of the NATO Honeymoon

The 1974 Turkish invasion of Cyprus further strained NATO's defenses on the Southern flank. Besides NATO, a major loser in these crises was the U.S., which (according to Greek sources) not only failed to prevent Turkish aggression in Cyprus, but also implicitly

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[69] Rallo, p. 327.
[70] Evanthis Hatzivassiliou, "Security and the European Option: Greek Foreign Policy, 1952-1962," Journal of Contemporary History, (SAGE, London, Thousand Oaks and New Delhi) Vol. 30 (1995), pp. 188.
[71] Ibid., p. 194.
[72] Ibid.
[73] Ibid., p. 198.

supported the military coup in Greece.[74] Although a civilian government was restored after 1974, the election of a socialist, Andreas Papandreou, put additional strain on U.S.-Greek relations.[75]

During his 1981-1988 tenure Papandreou conducted a strong anti-U.S. and anti-nuclear public relations campaign. Citing Leonid Brezhnev's words that "every country that allows nuclear weapons on its soil will be forced to participate in a nuclear war,"[76] he initially promised to expel U.S. forces—including nuclear weapons—from the Hellenic Republic and then to withdraw Greece from NATO. Besides, he argued, Turkey, not the Warsaw Pact, was the *real* threat to Greece.[77] However, towards the end of his first term in office, when criticized for not keeping these promises, he indicated that, as undesirable as continued NATO membership was, a clash with Turkey "would be unavoidable should Greece leave NATO."[78] So Greece remained a reluctant though openly critical participant in NATO and its nuclear programs.[79]

The above observations imply that a shift occurred in Greece's rationale for hosting U.S. nuclear weapons on its soil. Whereas in the 1950s the weapons were expected to play a direct role in deterring aggression from the Soviet Union and its allies, in the 1970s and 1980s U.S. nuclear weapons seemed to become a necessary tribute which Greece paid to NATO in the hope that NATO could constrain Turkish aggression. [80]

According to numerous public sources, in the early part of the 1990s, Greece continued to host nuclear weapons. Papandreou, who left office amid a scandal in 1989, was reelected in 1993. His policies in this post-Cold War period demonstrate a significant departure from those of his first administration—most notably in that no longer did he deem it necessary to play the role of the vehement anti-American. Gone also was his anti-nuclear rhetoric of the 1980s.[81]

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[74] Anthee Carassavas, UPI International Wire, June 22, 1996, Saturday, BC cycle, LEXIS-NEXIS version, p. 3.
[75] Ibid., p. 3.
[76] "Excerpts from an address on national defence to the Chamber of Deputies by Prime Minister Andreas Papandreou," cited in the British Broadcasting Corporation, Summary of World Broadcasts, January 27, 1987, LEXIS-NEXIS version, p. 2.
[77] Ibid.
[78] Ibid., p. 3.
[79] Papandreou implied that it was security concerns regarding Turkey that motivated Greece to continue NATO membership and to host U.S. nuclear weapons. Although there has never been a requirement for any NATO member to host nuclear weapons, Papandreou apparently saw this as important in order to retain U.S. support. For an informative discussion of the difficult nature of Greek relations with the Alliance during this period, see Jonathan Steele, "The U.S. bases that stayed," Manchester Guardian Weekly, December 28, 1986, p. 8.
[80] "Excerpts from an Address...," BBC, op. cit., p. 32.
[81] Stephen Weeks, "Papandreou Is Back and May Have Surprises in Store," Reuters North American Wire, October 15, 1993, Friday, BC cycle, LEXIS-NEXIS edition.

While the Greek government no longer openly argued against the Alliance's nuclear strategy, individual statements in favor of NATO's nuclear policy were not forthcoming. Those few government comments regarding nuclear weapons in Greece are largely in response to questions posed by investigative journalists.[82] In a particularly direct editorial, on writer for *Rizospastis* asserted that in 1992 the U.S. "installed 24 new atomic bombs at the Araxos base, replacing the old ones." The commentary went on to describe the role of the U.S. in Greece as that of a "suzerain." When queried about these reports, Defense Minister Yerasimos Arsenis of the PASOK party pointed out that issues relating to nuclear weapons were classified under "national security" and therefore refused to comment.[83] This 'neither confirm nor deny' policy is similar to that of other Allies.

c. Current Status

With the passing of Papandreou from the scene in 1996, Greece seems to be building on the momentum established during his second term regarding its relations with NATO. A U.S.-Greek Mutual Defense Cooperation Agreement signed in 1990 appears to provide more visible evidence of the special relationship between these two countries.[84] Greece continues to participate in meetings of NATO's consultative bodies and has not taken exception to NATO's nuclear policies in the post-Cold War period.[85] In an April 1996 address at Yale University, Prime Minister Costas Simitis said that in today's uncertain world, "Maintaining stability is no longer the sole responsibility of a single country; the onerous task once shouldered by the U.S. is now at least partly, the joint and common responsibility of all players."[86] Acknowledging that Greece's past "periods of crisis and constitutional deviations" had constrained fuller participation by Greece in international affairs, he stated that today Greece would be more willing to take an active role in "ensuring peace, stability and mutual respect in an area wider than its borders."[87] Pointing to regional security concerns in the Balkans and the eastern Mediterranean, Simitis

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[82] See for example, "Greek Government Against Nuclear Weapons," TASS, January 4, 1987. Also," Greek Papers Reveal Secret Greek-U.S. Nuclear Pact," The Xinhua General Overseas News Service, November 16, 1990 Item No, 1116220. From LEXIS-NEXIS.

[83] Editorial by "K.Z." "Country 'Nuclear Hostage' to U.S.," Rizospastis, (a Greek Communist newspaper) o," Greek Papers Reveal Secret Greek-U.S. Nuclear Pact," The Xinhua General Overseas News Service, November 16, 1990 Item No, 1116220. From LEXIS-NEXIS.August 6, 1995, p. 9, FBIS translation.

[84] "Relations between Greece the United States, Canada and the Latin American Countries," Hellenic Ministry of Foreign Affairs, Issue Paper, MFA Homepage, 1996.

[85] This impression is based on numerous interviews conducted by the authors and reflects the lack of dissenting views indicated in DPC/NPG communiqués published since 1990.

[86] "Greece in the Emerging System of International Relations," Address by The Prime Minister of the Hellenic Republic, Costas Simitis, Yale University, April 11, 1996.

[87] Ibid.

describes his country's neighborhood as one that lies at "the intersection of many lines of fissure whose instability can prove problematic for world affairs."[88]

Notably absent from Greek security policy statements are references to WMD threats or major concerns about a resurgent Russia. Continued NATO participation may be designed to enhance Greece's status as a "good European," which will hopefully lead to long term stability vis-à-vis what has become Greece's perennial security concern—Turkey.[89] To the extent, then, that Greece appears willing to continue with the basing of U.S. NSNFs on its soil, it may be less a function of the deterrent value of those weapons than of the opportunity they provide for Greece to demonstrate its worth as an Ally.

3. Turkey

a. Initial Concerns

Since the early years of the Cold War, Turkey has been a key Alliance player. "Indeed, the Cold War and the strategy of containment could be said to have had their origins in the Eastern Mediterranean with the Truman Doctrine and the U.S. commitment to bolster the 'Northern Tier' of Greece, Turkey, Iran and Afghanistan as a bar to Soviet adventurism in the Middle East."[90] The first bilateral aid agreement, signed between Turkey and the U.S. in 1954, established a precedent for numerous subsequent cooperative agreements.[91] As a loyal Ally that was a front line state during the confrontation with the Soviet Union, Turkey willingly accepted significant nuclear commitments during the Cold War. It hosted all major categories of weapons and provided delivery systems under dual key arrangements.[92]

Although its relationship with Washington was difficult at times, particularly over the already-mentioned problems with Greece, Turkey remained committed to the Alliance. One essential difference between Turkey and Greece in their relations with NATO and Washington

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[88] Simitis, op. cit. This speech and the IGC contribution are full of veiled references to Turkey as significant potential adversary. For example: "Greece often has to expend her energies in repelling the kind of demands on her sovereignty and territorial integrity that the rule of the international legal order should rule out as unthinkable between established states." Greece implies that by establishing a clear EU-based commitment that guarantees mutual assistance if territorial boundaries are violated (i.e., by Turkey), Greece will be able to better meet its other EU commitments. See "For a European Union with Political and Social Content (Greece's Contribution to the Intergovernmental [Conference])," Common Security and Defence, para. 60, 61, 62. Greek MFA Homepage, 1996.

[89] Recent crises between Greece and Turkey over Thrace, the islets of the Aegean, and Crete indicate that relations between these two countries are not likely to warm anytime soon.

[90] Ian O. Lesser and Graham E. Fuller with Paul B. Henze and J.F. Brown, Turkey's New Geopolitics: from the Balkans to Western China, A Rand Study (Boulder, San Francisco, Oxford: Westview Press), p. 122.

[91] Ibid.

[92] Daalder, op. cit., pp. 109-110.

was that throughout the Cold War, Turkey's direct exposure to the Soviet threat might have served to discourage any inclinations for Turkey to adopt a policy of estrangement or obstructionism—regardless of ill feelings over such events as the "Johnson letter" of 1964 or the 1975-1978 U.S. arms embargo.[93]

b. Post-Cold War Challenges

The end of the Cold War led to a reduction in East-West tensions. However, NATO's *Strategic Concept* points to continued threats in three main areas: those arising from instability that comes about as a result of economic, social, and political difficulties, particularly ethnic and territorial disputes in Central and Eastern Europe; those associated with the residual conventional and nuclear capabilities of the Soviet Union; and, those arising from the proliferation of WMD and ballistic missiles in the Southern Mediterranean and the Middle East.[94] It is important to note that no member of the Alliance is positioned to be directly affected by *each* of these challenges except Turkey. In the words of the Turkish Ministry of Foreign Affairs, "Despite the end of the Cold War, the world unfortunately is not a safer place than it was a couple of years ago."[95]

Of particular concern for Turkey are several potential areas of friction with Russia. Among these are Russia's actions in the Caucasus (e.g., Azerbaijan and Georgia), the fragmentation of political and physical control of Russian nuclear weapons and fissile materials, Russia's increased reliance on nuclear weapons (evident in its new military doctrine sanctioning first use), and the disagreement over Turkish regulation of shipping traffic through the Turkish Straits.[96] The list of Turkey's concerns in the Middle East is even longer:

> The pervasiveness of authoritarian regimes in the region, the unsettled nature of Iraq's role and status and its potential to press for regional hegemony again if and when international sanctions are lifted, the continuing vitality of the rivalry between Iran and Iraq, Islamic fundamentalism and radicalism and its proclivity to feed terror and train terrorists...water scarcity and the resulting tensions over the transboundary water systems of the river Jordan and the Tigris and Euphrates,...and the proliferation of weapons of mass destruction and their delivery systems.[97]

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[93] These two events, however, forever changed the way the Turkish government viewed the U.S. Trust would be a problem in future undertakings, and Turkey would be more inclined to see to its own interests. See "Relations With USA," Turkish Ministry of Foreign Affairs discussion paper. MFA Homepage, 1996.
[94] Ibid., paragraphs 9-12.
[95] "Relations with USA," op. cit..
[96] Duygu Bazoglu Sezer, "Turkey's New Security Environment, Nuclear Weapons and Proliferation," Comparative Strategy, vol. 14 (April-June 1995), pp. 151-155.
[97] Sezer, p. 162.

Furthermore, Turkey, unlike its potential Middle Eastern adversaries, is constrained in the numbers and geographical deployment of its armed forces by CFE treaty limitations.[98]

Every security challenge Turkey must face does not necessarily carry a nuclear dimension. However, those that do (i.e., the ones mentioned above relating to Russia and the Middle East) serve to highlight Turkey's compelling interest in the retention of nuclear guarantees from United States. In light of the manifold threats to Turkish security, it is easy to understand why some observers believe Turkey should place important caveats on its pledges not to acquire nuclear weapons. Essentially, such qualifications point to the idea that Turkey must receive unambiguous security assurances from its NATO partners—most importantly, the U.S.—and that Turkey must be convinced that a robust non-proliferation regime is in place and enforced.[99]

Currently, Turkey receives such assurances from NATO and the U.S. According to unofficial published reports Turkey continues to host U.S. NSNFs and participates actively in the Alliance's nuclear deliberations.[100] For the foreseeable future, neither changes to the U.S. nuclear posture in Europe nor changes in U.S. assurances to this important Ally—with powerful security motivations for continued nuclear deterrence—are envisioned.

D. CONCLUSION

Britain, Germany, and France attach great importance to a continued U.S. role in European security. Specifically, official statements indicate that they still consider U.S. nuclear guarantees a key force for peace and stability in Europe. In varying degrees, each harbors concerns that the U.S. might suddenly or through a process of atrophying interest disengage from Europe.

Each of the countries discussed above has security motivations for the continued viability of NATO's nuclear guarantees. In addition to these motivations, it should be noted that Italy and Greece—as full members of the EU and the WEU—may have potential "fall-back" positions short of nuclear self-reliance, through the British and the French nuclear forces, should they feel unprotected by NATO and the United States. Turkey must be less certain that it would be

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[98] Lesser, p. 117.

[99] Sezer points out that, while the current political elite in Turkey has not undertaken a serious discussion of "going nuclear", such discussions could not be ruled out if Turkey's security situation changed significantly. Turkey is a law-abiding state that understands the dangers, difficulties and sacrifices that would be associated with a decision to acquire nuclear weapons. Sezer, pp. 168-169.

[100] NRDC Nuclear Notebook, op. cit. Also, as a member of the Alliance's NPG and DPC Turkey has participated in every NATO decision regarding nuclear weapons since 1967. No Turkish dissent has been noted.

included in any European nuclear arrangement since it is not a member of the EU and only an associate member of the WEU.[101] These findings imply that Western Europe and the United States should ensure that the needs of Turkey in the nuclear realm are met, unless they are willing to accept an increased probability of Turkey pursuing a national nuclear weapons program.

E. KEY FINDINGS

- **NATO's current nuclear posture is supported by many officials in the major NATO European countries. However, NATO's nuclear weapons no longer command the same degree of public and official attention that they did during the Cold War.**

- **NATO members are concerned about any further erosion of U.S. nuclear guarantees. They would probably be alarmed by the removal of U.S. NSNFs without credible alternative assurances.**

- **In Greece and Italy support for NATO's nuclear posture serves genuine—though not necessarily pressing—national security purposes. Additionally, in both countries, to some extent, participation in Alliance nuclear affairs is seen as a means of enhancing the national image as a "good ally."**

- **In Turkey, NATO's nuclear posture is considered an absolutely essential aspect of national security.**

- **In light of Turkey's security motivations for nuclear protection and the lack of EU or WEU "fall-back" positions, if it perceives itself to be unprotected, there is a substantial chance that it will consider pursuit of a national nuclear program.**

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[101] References to the privileges of Associate membership are outlined in "Document on the Associate Membership of WEU of The Republic of Ireland, The Kingdom of Norway, and the Republic of Turkey," Turkey MFA Homepage, 1996. For a discussion of Turkish concerns regarding possible exclusion of Turkey from an ESDI see "European Security and Defense Identity and Turkey," Turkish Ministry of Foreign Affairs discussion paper. MFA Homepage, 1996.

IV. SCENARIO #1: THE STATUS QUO

Most Europeans would say, "My God, are they still there?[1]

British defense official

A. INTRODUCTION

On November 8th and 9th, 1991, NATO promulgated a strategic vision for the future of the Alliance, taking into account the tectonic changes which had occurred in 1989-1991. Entitled the Alliance's *Strategic Concept*, the doctrine affirmed the enduring value of NATO's nuclear weapons posture. According to this strategy, signed by all the heads of state and government of NATO's sixteen member countries, "the fundamental purpose of the nuclear forces of the Allies is political: to preserve peace and prevent coercion and any kind of war. They will continue to fulfill an essential role by ensuring uncertainty in the mind of any aggressor about the nature of the Allies' response to military aggression. They demonstrate that aggression of any kind is not a rational option."[2]

Furthermore, the Strategic Concept specified that NATO should "maintain adequate sub-strategic forces based in Europe," in order to "provide an essential link with [the] strategic nuclear forces" of the United States. These substrategic forces will "consist solely of dual capable aircraft which could, if necessary, be supplemented by offshore systems."[3] In 1994, the Clinton Administration's Nuclear Posture Review (NPR) reaffirmed the presence of U.S. non-strategic nuclear weapons in NATO Europe. The NPR determined that USAF Dual Capable Aircraft (DCA) were to remain in Europe and that the United States was to maintain its Alliance nuclear commitment.

According to unofficial, openly published accounts, nuclear weapons are presently stationed and dispersed among eight NATO countries (including the reserve sub-strategic forces stationed in the United States):[4]

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[1] Interviewed by the authors in March 1996.
[2] The Alliance's Strategic Concept, NATO Office of Information and Press, November 1991, para. 57.
[3] Ibid., para. 57.
[4] The following information is taken from data provided by the NRDC Nuclear Notebook, "U.S. Nuclear Weapon Locations, 1995," The Bulletin of the Atomic Scientists, November/December 1995, p. 74.

Country	Number of Weapons	Active Air Bases
Belgium	10	Kleine Brogel
Germany	245	Buechel Memmingen Norvenich Ramstein
Greece	10	Araxos
Italy	40	Aviano Ghedi-Torre
Netherlands	10	Volkel
Turkey	75	Balikesir Incirlik Murted
United Kingdom	90	Lakenheath
Total	**480**	**13**

Figure 4.1 Unofficial European Weapons Accounting
(According to the Bulletin of Atomic Scientists)

B. ASSUMPTIONS

Scenario #1 examines the prospects for U.S. nuclear weapons in Europe, assuming that the present regime is kept in place with only marginal or evolutionary changes. Several key assumptions underpin this scenario:

- First, while some infrastructure or systems changes may occur in parallel as the United States continues to pursue and exploit the development of conventional precision-strike, stand-off, and hardened target capabilities, this scenario does not envision significant nuclear modernization attempts (e.g., something similar to Follow-on to Lance (FOTL), or a stand-off surface-to-air missile capability). This includes no future development of a new type of nuclear warhead.

- Second, Scenario #1 does not foresee a change in nuclear declaratory doctrine beyond the already general classification of NATO's nuclear weapons as "weapons of last resort," a phrase in use since the July 1990 London Declaration. The declaratory doctrine will continue to reserve the right to a "first use" policy and will remain postured against any threat (conventional, biological, chemical, and nuclear).

- Third, in view of the prospective Comprehensive Test Ban regime, the weapons will be maintained by the United States under the auspices of the Department of Energy's stockpile stewardship program. Nuclear warheads will be monitored for the largely unknown effects of aging.

- Finally, while readiness may be tailored for and toward specific threats, no major posture changes are planned. In other words, the number of basing countries and delivery systems is assumed to remain relatively static.

Although the points listed above are described as assumptions, it is critical to note that these assumptions will not go unchallenged by factors both internal and external to NATO. In general, Scenario #1 posits the continuation of NATO's nuclear status quo and examines the prospects to that end. As a result, this chapter will examine the different factors that could threaten the continued viability of NATO's nuclear posture and, more specifically, the presence of U.S. nuclear weapons in NATO Europe.

C. DEVELOPING THE SCENARIO: OBSTACLES TO A CONTINUED NUCLEAR PRESENCE

In October 1991, Volker Rühe, the German Minister of Defense, commented at the Gleneagles meeting of NATO's Nuclear Planning Group that in Europe "there are no more nuclear weapons aimed at any concrete threat. These weapons insure us politically against risks that we cannot calculate, risks which might arise from the proliferation of weapons of mass destruction. They contribute to strategic stability."[5] This noteworthy, if vague, support for the continued presence of U.S. nuclear weapons in NATO Europe encapsulates the creeping ambiguity that is overshadowing NATO's nuclear posture today. As the conventional Soviet military advantages of the past have dwindled over the last decade, the perception of a Russian threat has also faded. As a result, the public's perception of a need for a nuclear deterrent is vanishing. In many ways, NATO nuclear doctrine seems to reflect this perspective. A recent NATO fact sheet on nuclear weapons explains that "NATO's Strategic Concept assigns nuclear forces a fundamentally political role: to preserve peace and prevent coercion. The circumstances in which the use of nuclear weapons might need to be contemplated are considered very remote."[6] At the same time, NATO's political elites and policy makers demonstrate enduring confidence with regard to nuclear weapons—NATO governments have continued to affirm the *political* value of these weapons. To NATO officials, nuclear weapons represent a political "glue" that brings almost all Alliance members together and, in times of strategic uncertainty, allows them to form a common and united front.[7]

The presence of these two different approaches to nuclear deterrence (ambiguity about operational relevance, and continued affirmation of the political functions within the Alliance)

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[5] Volker Ruhe, German Minister of Defense, comments at the Gleneagles meeting of the Nuclear Planning Group, cited in Michael Evans, "NATO says Farewell to Nuclear Conflict," The Times (London), October 21, 1992.

[6] "Facts on NATO's Nuclear Posture," in NATO Review, WEB Edition, Vol. 44, No. 4, July 1996.

[7] France and Iceland have never participated in the NPG, though Iceland has at times sent an observer.

introduces a dynamic that in some ways is hard to quantify, but nevertheless must be addressed. While officially NATO's declaratory doctrine calls for the continued presence of U.S. nuclear weapons in Europe, several factors threaten to undermine NATO's nuclear posture. These factors could, in the foreseeable future, provide for the structural, *de facto*, or *de jure* elimination of U.S. and NATO nuclear forces. The most important of these factors include the following:

- The U.S. nuclear stockpile stewardship regime
- NATO's nuclear force posture: readiness, tactics, and modernization
- No-first use advocacy and associated declaratory policy issues
- NATO enlargement, nuclear weapons free zones, and arms control

The evolution of these variables, individually or in concert, could instigate fundamental change with respect to NATO's nuclear force posture.

1. The U.S. Nuclear Stockpile Stewardship Regime

The United States nuclear weapons community is embarking on one of the most challenging and uncertain technical efforts it has ever undertaken.[8] Constrained by the Clinton Administration's commitment to a universal, zero-explosive-yield test ban as well as by the self-imposed U.S. test moratorium since 1992, the Department of Energy (DOE) and its nuclear weapons laboratories must continue to certify the safety and reliability of U.S. nuclear weapons—without nuclear testing. As one account put it, "the task is extraordinary, perhaps unique. Nobody has ever attempted to maintain any kind of electronic or mechanical device in perfect working order for two or three decades—the intended life of a nuclear weapon—without periodically testing it. With an estimated 6,000 parts functioning next to a radioactive core and surrounded by up to 100 pounds of conventional high explosives, they [nuclear weapons] are among the most complex industrial products in the world."[9]

a. U.S. Policy, the CTBT, and Nuclear Testing since 1992

On September 24, 1992, the U.S. House of Representatives adopted H.R. 5373, the Fiscal Year 1993 Energy and Water Development Appropriations Act.[10] The legislation included the Hatfield Amendment on nuclear testing and specified the following course of action

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[8] William B. Scott, "Aging Arsenal Poses Dilemma," in Aviation Week & Space Technology, July 17, 1995, p. 24.

[9] Ralph Vartabedian, "Sounding the Alarm on A-Arms," in Lexis-Nexis (The Times Mirror Company, Los Angeles Times), September 1, 1994.

[10] The specific details about the Hatfield Amendment were obtained from "The Clinton Administration and Nuclear Weapons Policy: Benign Neglect or Erosion by Design?" Prepared by the House Armed Services Committee Republican Staff, September 21, 1993.

for U.S. nuclear testing: (1) the bill provided $375 million for nuclear weapon testing in FY 1993, but rejected the Bush Administration's request for six nuclear tests; (2) it imposed a nine-month interim moratorium on nuclear testing; (3) following the interim moratorium, a limited number of tests were permitted, to be followed by a cessation of all testing after September, 1996, unless another nation tested. Although Congress placed considerable limits on U.S. nuclear testing through the Hatfield Amendment, it did not completely restrict U.S. testing. The controversial law clearly permitted a series of tests after the initial moratorium. Furthermore, even though it called for a termination of testing after September 1996, it provided an opportunity for continued testing if another nation tested (e.g., Russia, China, or France). President Bush subsequently signed the measure into law.

When the Clinton Administration took office, the President continued to pursue an unofficial moratorium and declined to conduct the limited series of tests permitted by the Hatfield amendment (after the expiration of the initial 9-month interim moratorium). On August 11, 1995, President Clinton announced that the United States would pursue a Comprehensive Nuclear Test Ban Treaty (CTBT) with no permitted nuclear test explosions.[11] Simultaneously, the President reaffirmed the importance of maintaining a safe and reliable nuclear weapons stockpile. In order to underline this effort, on September 25, 1995, the President directed necessary programmatic activities to ensure stockpile performance:

> To meet the challenge of ensuring confidence in the safety and reliability of our stockpile, I have concluded that the continued vitality of all three DOE nuclear weapons laboratories will be essential ... In accordance with this conclusion, I have directed the Department of Energy to maintain nuclear weapons responsibilities and capabilities adequate to support the science-based stockpile stewardship program.[12]

U.S. stockpile stewardship efforts have therefore, for the foreseeable future, been constrained to certify the safety, security, and reliability of the nuclear weapons arsenal without nuclear testing.

b. The Scope and Structure of the Stockpile Stewardship Regime

There are two primary elements of the U.S. stockpile stewardship regime: (1) the Scientific Stockpile Management Program (SSMP), which is intended to replace active nuclear weapons testing, and (2) the stockpile surveillance program, an annual non-nuclear test regime

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[11] Testimony by Bruce Tarter, Director, Lawrence Livermore National Laboratory, University of California, before the Senate Armed Services Strategic Forces Subcommittee regarding the Atomic Energy Defense Program, Lexis-Nexis (Federal Document Clearing House, Inc., Federal Document Clearing House Congressional Testimony), March 13, 1996.

[12] President Clinton cited in Ibid.

which randomly evaluates each of the weapons (and their individual components) in the U.S. stockpile. As a result of political imperatives and the CTBT, the Department of Energy, in cooperation with the Department of Defense, is launching SSMP, designed to "ensure that U.S. nuclear weapons will remain safe and function predictably as they age. It is classed as a 'science-based' approach as opposed to the traditional test-based approach."[13] According to Dr. Victor Reis, DOE's Assistant Secretary for Defense Programs, SSMP has three primary goals:

1. Provide high confidence in the safety, security, and reliability of the U.S. stockpile to ensure the effectiveness of the U.S. nuclear deterrent while simultaneously supporting U.S. arms control and nonproliferation policies.
2. Provide an appropriately sized, affordable, environmentally sound, and effective production complex to provide component and weapon replacement when needed, including limited lifespan components and tritium.
3. Provide the ability to resume U.S. nuclear testing and reconstitute nuclear weapon production capacities, consistent with Presidential Directives and the START II Treaty, should national security demand it in the future.[14]

In essence, there are three primary challenges for SSMP. First, it must be a stockpile surveillance tool, able to predict weapons reliability problems and suggest corrective actions. Second, SSMP must be able to correlate data from previous underground tests to new and unproven "above ground" experiments without any nuclear explosive yield. Finally, the program must be able to support the design of new or replacement warheads.[15]

The U.S. nuclear weapons community has certainly used methodologies short of nuclear explosive tests to design and build nuclear warheads and weapon systems in the past. However, previous design efforts were subsequently validated and certified through underground nuclear tests. What makes the SSMP approach so unique is that it requires scientists to rely almost exclusively on theoretical calculations and assumptions. Validation through testing is not permitted. The science-based approach relies heavily on the processing power of an entirely new generation of computers, but as scientists stray further from the proven data derived from actual

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[13] William B. Scott, "Aging Arsenal Poses Dilemma," p. 24.

[14] Prepared Statement of Dr. Victor Reis, Assistant Secretary for Defense Programs, Department of Energy, before the Senate Appropriations Committee, Energy and Water Development Subcommittee, in Lexis-Nexis (Federal Information Systems Corporation, Federal News Service), April 16, 1996. DOE Secretary Hazel O'Leary revealed in congressional testimony that if notified of a testing requirement, it would take the department a full two years before it would be prepared to conduct an underground nuclear test at the Nevada test site. Please see the Hearing of the Senate Armed Services Committee, Department of Energy's Atomic Energy Defense Activities and FY '97 Budget Request.

[15] Prepared Statement by Dr. Harold P. Smith, Jr., Assistant to the Secretary of Defense (Atomic Energy), before the Senate Armed Services Committee, Subcommittee on Strategic Forces, in Lexis-Nexis (Federal Information Systems Corporation, Federal News Service), May 16, 1995.

tests, the computer codes must be refined and changed. Ironically, the more the codes are refined in response to experiments from non-nuclear tests, the more suspect they become from a designer's point of view, until they have been recalibrated against new nuclear explosive tests.[16]

At the risk of being somewhat simplistic, the following analogy is worth considering. According to James Mercer-Smith, one of only about 40 active weapons designers left in the United States,

> what we are essentially doing is sticking an aircraft in a hanger for 20 years. I can look at it, open a few panels, but never run the engine. After 20 years, we will fill it with gas and go fly it. Needless to say, it worries us a lot.[17]

Indeed, the scope and charter of SSMP are both broad and challenging. As Dr. John Deutch, when serving as the Under Secretary of Defense for Acquisition, indicated, "the pace and magnitude of the long-term effect of a comprehensive test ban on our nuclear stockpile cannot be predicted; however, history has shown that while the changes in our security may be positive, the changes in our confidence in the stockpile will not be positive. Those who have experience in the U.S. nuclear weapon design, development, testing and production programs are largely convinced that confidence in the safety and reliability of the stockpile will decrease over time."[18]

c. Specific Problems with SSMP and DOE's Nuclear Stockpile Surveillance Program

The concerns expressed by scientists and policy makers address many aspects of the new approach to stockpile management. It is important to note that the weapons that the United States deploys in Europe in support of its NATO commitments (these weapons reportedly consist of various modifications of the B-61 gravity bomb) fall under the same management as the rest of the U.S. arsenal. Thus the confidence level regarding the weapons in Europe is subject to the same management program.

(1) SSMP and Stockpile Confidence. According to many scientists and officials, "without testing, there will be potential erosion in the degree of confidence in the individual and collective characteristics of the stockpile."[19] The overwhelming concern is that

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[16] Hugh Gusterson, "NIF-ty exercise machine: is NIF a fancy cross-trainer for weapon scientists, or a covert way to design new weapons," in Lexis-Nexis (Information Access Company, a Thomson Corporation Company, Educational Foundation for Nuclear Science, Bulletin of Atomic Scientists), September 1995.
[17] James A. Mercer-Smith cited in Scott, William B. "Aging Arsenal Poses Dilemma," p. 25.
[18] Statement of Dr. John Deutch, Under Secretary of Defense for Acquisition, HASC/MANEP Lab Consolidation Hearing, April 30, 1993, p. 10.
[19] Prepared Statement by Dr. Harold P. Smith, Jr., Assistant to the Secretary of Defense (Atomic Energy), before the Senate Armed Services Committee, Subcommittee on Strategic Forces.

scientists and engineers do not understand enough about the individual materials to be able to confidently predict their characteristics as they age. As Dr. Deutch pointed out, "despite many studies we still cannot confidently predict how the various metals, plastics, salts, and other materials that make up a nuclear warhead respond to various environments during the decades that nuclear weapons are in the stockpile. Based on historical trends of stockpile life, we might expect one serious defect per year to require corrective action over the entire stockpile."[20] This point of view is corroborated by weapons designers such James Mercer-Smith at Los Alamos National Laboratory. "Weapons out there now are deviating from design. The parameters of the original design change with age, understanding the performance of an aging weapon is much harder than designing a brand new weapon ... We have never had to do that before." Furthermore, "plutonium has only been on Earth for about 50 years," Mercer-Smith indicates. "It is one of the strongest materials known to man. We do not know how it will react as it ages. There is no knowledge based on long-term effects. We are having to learn real-time."[21] Dr. Siegfried S. Hecker, the director of Los Alamos National Laboratory, explains that since 1970, "several thousand stockpile weapons required major modifications or were retired early because aging or deficiencies prompted safety or performance concerns." According to Dr. Hecker, "weapons change due to material degradation, corrosion, and other factors. Cracks and voids can develop in components. Helium impurities from radioactive decay will build up in plutonium."[22]

Based on the widespread concern of individuals intimately familiar with the design of the nation's nuclear weapons, it seems reasonable to assert that confidence in the stockpile is likely to decrease over time. As the stockpile shrinks, this decrease in confidence may become increasingly significant. In the past, if a stockpile confidence test revealed a major flaw in a nuclear weapon, the affected system would have been one of possibly six or eight types of weapons or warheads in the inventory. In the future, with a much smaller arsenal based on fewer types of warheads, such a flaw could involve one out of possibly two or three types of warheads.[23] The results of such a failure could be catastrophic, especially if the failure involved the only nuclear warhead in place (e.g., the sole type of nuclear warhead currently deployed in NATO

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[20] Statement of Dr. John Deutch, Under Secretary of Defense for Acquisition, pp. 6-9.
[21] James A. Mercer-Smith cited in Scott, William B. "Aging Arsenal Poses Dilemma," p. 25.
[22] Hecker cited in Ibid., p. 25.
[23] "Department of Defense Whitepaper on Nuclear Testing," in the Hearings on the National Defense Authorization Act for Fiscal Year 1993—H.R. 5006 and Oversight of Previously Authorized Programs. Report before the Committee on Armed Services, House of Representatives, 102nd Congress. Department of Energy Defense Nuclear Facilities Panel Hearings on Department of Energy Defense Programs, March and April 1992, pp. 463-4.

Europe). In the past, confidence remained high because after potential problems were detected and remedied, nuclear weapons were unambiguously recertified through actual testing. With the task of maintaining a credible nuclear deterrent resting on so few weapons types without the benefit of such testing, the need to remain vigilant about the reliability of those systems is in fact more critical than ever before.[24]

(2) DOE's Nuclear Stockpile Surveillance Program. While testing was permitted in the past in order to validate the reliability and safety of nuclear weapons, it was definitely not the sole diagnostic tool in the stockpile management process. As discussed above, DOE and the weapons laboratories have always operated a surveillance program that selects random weapons for non-nuclear testing and analysis. In this way, numerous problems have been discovered and corrected and weapons have been either returned to the active stockpile or retired. It is important to note that stockpile surveillance requirements dictate that DOE continue to maintain this diagnostic function today in addition to SSMP. While SSMP is designed to replace the need to actively test, an ongoing surveillance program has always been essential, and even greater scrutiny will be required in the future.

In fulfilling this surveillance role, DOE conducts three types of stockpile surveillance tests—flight tests, nonnuclear systems laboratory tests, and nuclear and nonnuclear component tests—on the remaining types of nuclear weapons in the arsenal.[25] "Flight tests involve the actual dropping or launching of a weapon which has had the nuclear components removed. Nonnuclear systems laboratory tests involve testing a weapon's nonnuclear systems to detect defects due to handling, aging, manufacturing, or design. The nuclear and nonnuclear components laboratory tests involve destructive analysis to identify defects or failures in individual weapons components."[26] Significantly, a recent General Accounting Office (GAO) report found that

> *DOE is behind schedule in conducting many of the stockpile surveillance tests.* These include flight tests of three types of weapons, nonnuclear systems laboratory tests of one type of weapon, and laboratory tests of most key components. In some instances, DOE is several years behind schedule. Only through testing can DOE identify problems or defects that would warrant changing the reliability level it assigns to a particular weapon. *Being behind schedule in the testing program provides DOE with less information on the*

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[24] Ibid., p. 464.
[25] Nuclear Weapons: Improvements Needed to DOE's Nuclear Weapons Stockpile Surveillance Program. Report to the Committee on Armed Services, U.S. Senate. Washington D.C.: United States General Accounting Office,
July 31, 1996, p. 1.
[26] Ibid., p. 2.

weapons, thereby providing less confidence in the reliability levels assigned [emphasis added].[27]

Currently, the only testing schedule close to target is the flight test schedule. According to the report, DOE planned to conduct a minimum of 3 flight tests per year—or 12 tests over a 4-year period—for bombs; currently, this schedule is still being followed. However, the department lags behind in all other stockpile surveillance testing:

- Nonnuclear Systems Laboratory Tests: These involve testing the nonnuclear systems—such as the radar systems and fuzes—in the weapon to detect defects due to handling, aging, manufacturing, or design. DOE officials said the Department should have conducted about 28 laboratory tests, but over the past 4 years, only 15 (or 54 percent) tests were performed. DOE officials indicated that in this case, the lack of testing reduces their confidence in the weapon's reported reliability. DOE officials could not quantify the decrease in confidence.[28]

- Laboratory Tests of Nuclear and Nonnuclear Systems: The five key components tested are the pit, the secondary, the detonator assembly, the gas transfer system, and the high explosive.[29] Testing of four of these key components has been behind schedule in recent years. Only the high explosive tests have been conducted on schedule. The backlogs for the testing schedules vary from 1 to 5 years.[30]

While these serious problems involving the stockpile surveillance program seem to indicate a pervasive neglect of stockpile reliability, DOE has not put forth credible efforts to remedy the problem. According to the report submitted to the U.S. Senate Armed Services Committee, "DOE does not have formal written plans describing how it will return component laboratory tests to the schedule. Officials representing all organizations involved in the testing meet periodically to resolve problems affecting the testing program." DOE officials indicated that in this manner they reach agreement on "what to do and how to do it." However, as the GAO report accurately determines, "without formal documents detailing plans, costs, and schedules, it is difficult—if not impossible—to review the plans and assess their

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[27] Ibid., p. 1.
[28] Ibid., pp. 5-6.
[29] The pit is a metal casing that contains plutonium. The pit is where the fission explosion originates. A nuclear weapon secondary is an assembly in the weapon where a fusion explosion originates. The detonator sets off the high explosive, and the gas transfer system includes a tritium reservoir and associated hardware. For a more detailed explanation, see page 3 of the report.
[30] For a detailed analysis of the backlogs of individual components, please refer to pages 6 and 7 of this report.

adequacy, determine the cost-effectiveness of the plans, or measure the progress the test facilities are making."[31]

Finally, the investigation of DOE's surveillance program also revealed that "DOE does not have formal contingency plans for continuation of stockpile surveillance tests in the event that one or more of the testing facilities experience serious operational problems and could not perform testing for an extended period of time."[32] In summary, DOE officials themselves admit that the lack of component testing decreases DOE's confidence in the reliability, safety, and security of the weapons in the nation's nuclear stockpile. Furthermore, DOE officials indicated that they could not estimate the degree to which confidence had decreased.[33]

(3) The Tritium Problem. Nuclear weapons today are undoubtedly the most devastating weapons in the world. However, their awesome power conceals a critical vulnerability. The sophisticated nuclear weapons in the U.S. arsenal are dependent on tritium, "a rare radioactive gas that decays inexorably by 5 percent per year [tritium has a half-life of 12.3 years]. Unless their tritium is replaced, the destructive capacity of the weapons wastes away."[34]

Nuclear weapons in the U.S. arsenal today are not comparable to the relatively simple designs of the two bombs used during World War II. Today's hydrogen bombs are far more destructive than their single-stage ancestors. Modern nuclear weapons typically are two and sometimes three stage devices, in which an initial fission reaction is used to seed and generate a much greater fusion-driven secondary stage. U.S. nuclear weapons require tritium for its role in boosting the initial atomic explosion, which is used to set off the secondary hydrogen bomb.[35] Significantly, only with boosting is it possible to build small, powerful weapons that can be carried by cruise missiles or in the form of gravity bombs on fighter-bomber aircraft. As tritium decays, the boosting effect is weakened, lessening the weapon's destructive power. In fact, "the unboosted yield of a modern American warhead is just 500 tons—less than a fortieth of the explosive of the Nagasaki bomb."[36] This makes the primary a very critical element of the device

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[31] Ibid., p. 10.
[32] Ibid., p. 11.
[33] Ibid., p. 7.
[34] Donald MacKenzie, "The Tritium Factor," in Lexis-Nexis (Newspaper Publishing PLC, The Independent), April 15, 1996.
[35] As explained in the article by Donald MacKenzie, in atomic bombs, a shell of chemical high explosives is used to compress a spherical core of highly enriched uranium or plutonium. The resultant nuclear chain reaction is intensified greatly by injecting a mixture of tritium and deuterium into the core. The interest is not in creating a mini-hydrogen bomb but in the neutrons the fusion produces: this accelerates the chain reaction in the highly enriched uranium or plutonium, making the fission bomb more efficient.
[36] Ibid.

as a whole. If the yield of the secondary is low, the effects will nonetheless be substantial; however, if the primary yield is too low, the secondary will not explode, and the overall explosive yield will be greatly reduced, if the weapon is not a complete "fizzle."[37] Thus, some analysts have dubbed tritium the "Achilles heel" of a modern nuclear weapon.[38]

In 1988, the United States interrupted its production of tritium gas due to production and safety problems at DOE's Savannah River site. The halt in tritium production was deemed a temporary stoppage during which the U.S. government was to decide on one of two options to resume tritium production:

- One is to convert an existing civil reactor (or to build one), and to produce military tritium within the reactor (light-water type).
- The alternative is an approach as yet untried on a large scale: to produce tritium by bombarding either lithium or one of the isotopes of helium in a massive, new, continuously operating particle accelerator. This would take five years to build, cost around $3 billion, and draw up to 550 megawatts of electric power from the grid, enough for a medium sized city.[39]

Tritium is currently being recycled from the active stockpile, but the current prognosis is that the supply will be inadequate by 2008. It is known that it will take 10 to 15 years from the start of construction on a new facility to the production of tritium, and even optimistic predictions are revealing a shortfall period. It is interesting to note that a 1993 U.S. House of Representatives Armed Services Committee report regarding the tritium supply problem revealed that the Clinton administration placed the K reactor at Savannah River in "cold standby" while simultaneously canceling a demonstration of the new production method technology. Thus, the decision regarding a production method choice was intentionally deferred beginning in 1993.[40] The 1994 Nuclear Posture Review recognized the urgency in the tritium supply situation and recommended an accelerated decision with respect to a tritium source and production program. To date, DOE has not arrived at a decision regarding the country's next tritium source.

(4) Plutonium Component Fabrication. According to most knowledgeable observers, another impending crisis for the U.S. nuclear weapons infrastructure resides in the lack of a robust and reliable plutonium component fabrication capability. Although the shutdown of production capabilities at Building 707 at the Rocky Flats plant in Colorado may have been warranted due to environmental concerns, the United States has severely limited its capability to

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[37] "Nuclear Simulation: What is it and will it work?" in Lexis-Nexis (The Straits Times Press Limited, The Straits Times, Singapore), December 21, 1995.
[38] This fact is not lost on ambitious anti-nuclear activists and disarmament advocates.
[39] Donald MacKenzie, "The Tritium Factor."
[40] "The Clinton Administration and Nuclear Weapons Policy: Benign Neglect or Erosion by Design?" p. 12.

fabricate plutonium components for new or redesigned weapons in the future. According to one source, "through neglect, budget-cutting, and application of environmental restrictions, the [plutonium fabrication] infrastructure is under precipitous decline. The last new warheads came off the Pantex Production line near Amarillo, Texas, five years ago."[41] With the Rocky Flats facility shut down and the Pantex facility primarily concerned with weapons disassembly operations, the ability to fabricate plutonium components has been drastically curtailed. Although DOE has determined that the Los Alamos National Laboratory site will be responsible for the production of a very small number of pits, this role has not yet been fully initiated. It appears that the United States in the future will be forced to rely almost exclusively on reusing old pits. "The idea of reusing old pits is relatively new and much still remains to be learned. Although reusing old pits may work in some situations," unambiguous validation of new or modified weapons designs that rely on old pits would, ironically, still require nuclear explosive tests. "In fact, [in the past] such weapon designs incorporating reused pits have required extensive underground testing in recent years."[42]

The future incorporation of reused pits or the refabrication of old components may be increasingly problematic as the stockpile ages. Scientists indicate that it may be difficult to refabricate old components because "the original technologies may be obsolete, the original materials and processes may no longer be available, and original facilities may no longer be usable."[43] Thus, the requirement to design and produce plutonium components will remain critical even as the stockpile becomes smaller in the future. As Dr. Narath points out, "it is clear that to ensure that the stockpile remains safe, secure, and reliable, the nuclear weapons complex must establish the capabilities needed to repair, requalify, or renew warheads in the stockpile. Furthermore, it is important that the complex maintain the capability to design and develop new weapon components and subsystems since military requirements may change," and since older materials, processes, and facilities may no longer be available.[44]

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[41] Michael R. Boldrick, "The Nuclear Posture Review: Liabilities and Risks," in Parameters, Vol. XXV, No. 4, Winter 1995-96, pp. 87-8.
[42] "The Clinton Administration and Nuclear Weapons Policy: Benign Neglect or Erosion by Design?" p. 13.
[43] This testimony directly contradicts claims that testing will not be required in the future and that, as weapons age, they can simply be remanufactured according to original known and tested designs. For further information regarding this problem, please see the Prepared Statement of Albert Narath, Director Sandia National Laboratories, before the United States House of Representatives, Committee on National Security, Subcommittee on Military Procurement, in Lexis-Nexis (Federal Information Systems Corporation, Federal News Service), March 29, 1995.
[44] Ibid.

d. Historical Perspectives on Testing Moratoriums and Nuclear Weapon Development

In order to understand the profound impact of a testing moratorium on a nuclear weapons program as well as to gain an appreciation for the complexity of nuclear weapon development programs, it is helpful to review several incidents in the history of the U.S. nuclear weapons stockpile. "Since 1958, the United States has deployed forty-one nuclear weapons systems," and of these systems, fourteen needed corrective modifications after they were deployed or were ready for deployment.[45] According to the recently released GAO report on the U.S. nuclear stockpile,

> from 1958 to 1996, DOE's stockpile surveillance program has tested about 14,000 weapons, with about 2,400 findings documented. Over 50 percent of these findings were considered 'significant.' A significant finding is the identification of a defect or failure in a weapon system. A defect is an observable anomaly, while a failure is a flaw or malfunction in the weapon that would prevent the weapon from operating as intended.[46]

For example, during the final proof test of an air-launched cruise missile warhead in the mid-1980s, a low-temperature nuclear test revealed that the warhead exploded with only a tiny fraction of its design yield. Notably, the weapon had been tested extensively in non-nuclear hydrodynamic tests, including the low-temperature extremes, with no indications of problems.[47] In a different example, the nuclear warhead for the Sergeant missile, designed during the 1958-61 moratorium, was fielded in April 1962. Due to the moratorium, the design was based on nonnuclear hydrodynamics tests and on computer design calculations. However, because the warhead was based on a successfully tested earlier design, there was great confidence that the new warhead would perform as expected. When the warhead was finally tested, however, it gave off only a fraction of its expected yield. In fact the yield was so low that it was considered militarily ineffective.[48]

In summary, in the time span from 1958 to 1996, over 17 percent of the surveillance inspections conducted on the U.S. nuclear stockpile revealed some type of abnormal or unexpected finding. Over 50 percent of those were considered significant. In addition, there

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[45] "Department of Defense Whitepaper on Nuclear Testing," in the Hearings on the National Defense Authorization Act for Fiscal Year 1993—H.R. 5006 and Oversight of Previously Authorized Programs, p. 462.

[46] Nuclear Weapons: Improvements Needed to DOE's Nuclear Weapons Stockpile Surveillance Program. Report to the Committee on Armed Services, p. 2.

[47] "Department of Defense Whitepaper on Nuclear Testing," p. 462. Note: Information regarding the two examples presented here is taken from this source.

[48] Ibid., p. 462.

were several incidents involving unexpected results from nuclear tests when designers and engineers felt confident that the nuclear system being tested was reliable and effective. Some of the more significant flaws were discovered as recently as the mid-1980s when the U.S. nuclear stockpile was relatively modern. Today, the United States manages the oldest nuclear arsenal in the history of the stockpile. It is therefore understandable that designers and technicians familiar with the U.S. nuclear stockpile are concerned about the future of U.S. and NATO nuclear weapons.

e. DOE and Nuclear Weapons: Budgetary Trends

The discussion of the U.S. nuclear weapons stockpile regime and its potential impact on the future of U.S. and NATO nuclear weapons would be incomplete without examining current budgetary trends and their implications.

Evidence of worrisome budgetary trends within DOE first surfaced in 1994 when a secret letter from Deputy Defense Secretary John Deutch to the head of DOE, Hazel O'Leary, was leaked to the press. In the letter, Deutch revealed his deep concern that DOE's budget "does not provide sufficient resources to maintain the technological capability that is required for future nuclear missions."[49]

DOE's budget practices are revealing in that they show how the SSMP and stockpile surveillance program are being inadequately funded. While the President and DOE have called for a credible SSMP and the establishment of a robust scientific base for the future of the nuclear stockpile, the budget allocations reveal shortfalls. Congressional testimony has brought to light significant decreases in the planned outlays for DOE and the SSMP and surveillance program. According to the testimony, atomic energy defense activities are logged under the '053 account' funds (including the Stockpile Stewardship and Management Program). In an examination of DOE's 1997 budget request, Senator Dirk Kempthorne (R-Idaho), a member of the Senate Armed Services Committee, revealed concern regarding the projected 053 funding levels contained in the budget submitted by the President to Congress in April 1996. According to this document, in terms of outlays, the president requested $10.55 billion for the 053 account for FY 1997; $10.2 billion in FY '98; $9.32 billion in FY '99; $8.43 billion in FY 2000; and

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[49] Peter Gray, "O'Leary v. Deutch," in Lexis-Nexis (Information Access Company, a Thomson Corporation Company, Educational Foundation for Nuclear Science, Bulletin of Atomic Scientists), November 1994.

$8.81 billion in FY 2001. In Senator Kempthorne's words, "over the next four years President Clinton proposes to reduce the 053 account by over $2 billion or 20 percent."[50]

According to a Senate Armed Services Committee review, the "DOE cannot meet its national security responsibilities at the funding levels contained in the President's seven-year budget plan... The problem is exacerbated by the fact that at the same time when the President's budget proposes a large reduction in the 053 account, the SSMP includes a large number of expensive new construction and technology development projects in order to substitute for underground nuclear tests and upgrade the nation's nuclear weapons production complex."[51] In addition, the individual nuclear laboratory directors (Los Alamos, Sandia, and Livermore) testified in Congress that they needed $4 billion per year in order to implement the SSMP over the next 10 years. But the final FY '97 budget request for DOE defense programs is only $3.7 billion.[52] It is interesting to note that the day after these hearing were held, Energy Secretary Hazel O'Leary, "in what she termed 'a terrible error,' said that the Clinton administration's five-year budget for DOE's nuclear weapons programs was severely underfunded and in need of correction by Congress."[53]

Senator Sam Nunn, a respected law maker in policy making and defense circles, has indicated that while it appears that DOE may finally be closing in on the Savannah River site as the location of the new tritium production facility, DOE has nonetheless placed the site on a list of facilities that are to be shut down and removed from the defense business.[54] Thus it appears that the commitment to establishing a tritium production site has been weakened even further. From a general perspective, the impetus for a dramatic reduction in U.S. reliance on nuclear weapons seems clear when the programmatic impact statement for SSMP released by DOE revealed that by the year 2005, 80 percent of the infrastructure associated with the design, manufacture, testing and maintenance of U.S. nuclear weapons will be dismantled.

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[50] Hearing of the Senate Armed Services Committee, Department of Energy's Atomic Energy Defense Activities and FY '97 Budget Request, Lexis-Nexis (Federal Information Systems Corporation, Federal News Service), April 16, 1996.

[51] Ibid. According to congressional testimony, the science-based stockpile stewardship program requires construction of the National Ignition Facility (NIF) at Lawrence Livermore; construction of the Atlas at Los Alamos; completion of other major facilities at Los Alamos; possible construction of the accelerator; production of the alternative generating source for tritium; development of the accelerated strategic computing initiative and modernization of the production plants.

[52] Ibid.

[53] For further information on these announcements, please see George Lobsenz, "Administration Made 'Terrible Error' in Weapons Budget," in Lexis-Nexis (King Communications Group, Inc., The Energy Daily), April 17, 1996.

[54] Ibid.

There is little doubt that that there is room for reductions in the nuclear arsenal of the United States in the post-Cold War era. Indeed, Presidents Reagan and Bush were both party to some of the largest reductions in U.S. nuclear weapons in history. However, as the arsenal shrinks in size, several points are relevant: (1) with the reduced number of weapons systems, reliability and confidence become increasingly important; (2) nuclear weapons assume no less a value due to U.S. reductions in the eyes of the proliferant states than they did before; and (3) it is in the national security interests of the United States to continue to assure a smaller but robust, safe, and highly reliable nuclear stockpile. This will definitely not be an easy or simple task. As John Deutch has said,

> the general public (and many public officials) suffer from an erroneous perception that very little work remains for the DOE laboratories in nuclear-weapon research and development. The end of the cold war and the lack of any new nuclear-weapon development requirement have created a malaise in public attitudes toward defense, in general, and nuclear deterrence, in particular. However, the technical challenges of stockpile stewardship are formidable and require sustained technical excellence and adequate funding support.[55]

Concerns regarding the confidence of the European NATO Allies in the U.S. nuclear guarantee will figure prominently in this environment, especially in the future. In 1992, Dr. Robert Barker, then Assistant to the Secretary of Defense for Atomic Energy, accurately noted that "if confidence in our deterrence fails, those who count on us, in fact, may well be stimulated to develop their own nuclear forces. They may view us as becoming less reliable as far as our own nuclear umbrella is concerned."[56]

2. NATO's Nuclear Force Posture: Readiness, Tactics, and Modernization

In their June 1996 final communiqué, the Defense Planning Committee and Nuclear Planning Group summarized the recent reconfiguration of NATO's nuclear force posture in the following way: "In the light of the changing security environment in Europe, NATO's nuclear forces have been substantially reduced, they are no longer targeted against anyone and the readiness of NATO's dual-capable aircraft has recently been adapted."[57] NATO's nuclear forces are currently operating under the auspices of what can be termed an adaptive planning approach.

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[55] John Deutch cited in the Prepared Statement of Albert Narath, Director Sandia National Laboratories, before the United States House of Representatives, Committee on National Security, Subcommittee on Military Procurement.

[56] Hearings on the National Defense Authorization Act for Fiscal Year 1993—H.R. 5006 and Oversight of Previously Authorized Programs. Report before the Committee on Armed Services, House of Representatives, p. 450.

[57] Final Communiqué, Communiqué M-DPC/NPG-1 (96) 88, NATO Press Service, June 13, 1996, p. 3.

This implies that there is no predesignated target set nor a series of set mission profiles. Instead, future nuclear operations would be conducted on an ad hoc basis—individually planned and executed. In this manner, NATO appears to have "adapted its dual-capable aircraft readiness in line with the current security environment."[58] These efforts seem to have been designed to maintain an enduring nuclear presence, as well as to improve inter-regional operability to counteract possible non-conventional threats (e.g., WMD threats from proliferant states).

In adapting its nuclear force posture, NATO will, in the future, almost certainly face a dilemma. As these forces are confronted with aging, new technology, and more robust countermeasures, will they eventually become militarily ineffective? If this occurs, will they still retain their political deterrent value?

If sub-strategic systems (in this case dual-capable aircraft) are to be viewed as a deterrent, they must be capable and effective systems. As Sir Michael Quinlan, the former British Permanent Under-Secretary of State for Defense, points out, "if nuclear weapons are to play an effective and dependable part in war-prevention, they must be capable of actual use in some rational way."[59] Indeed, if weapons are simply "symbols on a diplomatic chessboard" and have no credible use, they lose their power to dissuade and deter. Furthermore, Quinlan correctly observes that "deterrence does not exist in abstract isolation; it arises from a hypothesis, however conditional or remote, of actual use."[60] Thus, in accordance with this perspective, NATO's sub-strategic deterrent should be able to respond on a carefully limited scale, presenting planners with flexible options, capable of swift action, accuracy, and measured, controlled choice. These operational characteristics are necessary to ensure a robust deterrence regime.

In order for the sub-strategic deterrent to carry its weight, it must be credible, even in times of reduced tension. This is especially true since the strategic uncertainty within the current international environment includes multiple threats from non-traditional avenues, such as the proliferation of WMD to states and non-state actors with interests inimical to those of the United States and its NATO Allies.

Several constraints in NATO's nuclear force posture should be kept in mind. Dual-capability implies that there is a split role for these weapons systems; armaments must be switched, and aircraft could be lost during their conventional strike missions. Furthermore,

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[58] Final Communiqué, Press Communiqué M-DPC/NPG-2 (95) 117, NATO Press Service, November 29, 1995, p. 5.
[59] Michael Quinlan, "Nuclear Weapons and the Abolition of War," in International Affairs, Vol. 67, 1991, p. 299.
[60] Ibid., p. 299.

aircraft are dependent on large, fixed airbases. In addition, on the ground unsheltered aircraft are vulnerable to preemptive strikes. Their employment in medium and long-range theater operations is considerably more demanding against air defense systems than, for example, that of an air-breathing air-launched stand-off weapon like a cruise missile or some other type of air-to-surface missile.

The level of effort involved in mounting a nuclear strike with a DCA is fairly considerable. Such an operation would require several fighter-bombers loaded with nuclear weapons (a single system would not provide enough confidence for successful employment). They would be surrounded by a package of perhaps 15 to 20 aircraft in various support roles: (1) air-refueling, (2) suppression of enemy air defenses (SEAD), (3) airborne early warning, and (4) airborne command and control. The operation would require multiple aircraft departing from multiple airfields in a coordinated effort across national boundaries in arguably some of the most congested airspace in the world. The employment challenges in mounting such an operation would be formidable, especially considering the fact that, if threatened, a nuclear response must be unquestionably credible and deliverable. Having said this, there are several potential avenues for modernization:

- Nuclear Warhead Modernization. The development of any one of several militarily desirable nuclear weapons: (1) an electromagnetic pulse (EMP) weapon designed to neutralize an enemy's communications networks, (2) a shaped charge, directed energy weapon designed for hardened target penetration, or (3) a suppressed radiation weapon, used to minimize radiation and fallout effects while still taking advantage of blast effects. It is important to note that the development of these types of weapons is not likely without nuclear testing.
- Delivery Systems Modernization: This would concentrate on a different way to deliver the warhead to the target, moving away from gravity bombs mounted on dual-capable aircraft and their inherent constraints. Possibilities include: (1) an air-breathing stand-off system such as a cruise missile, or (2) a long-range air-to-surface rocket.
- Command and Control Improvements: One of the concepts currently discussed by scientists and engineers involves the idea of a "wooden bomb" or "super PAL." According to this concept, the delivery of a nuclear bomb would not require (as is the case today) extensive wiring and systems upgrades on aircraft. The bomb would be "remotely" controlled and only employable in a very stringent "operational window." The weapon could be deployed on any aircraft and would be carried just like any standard conventional weapon. This would make the weapons widely deliverable and would eliminate the necessity for costly and inherently arduous systems and procedural upgrades on aircraft platforms. At the same time, the weapons would only be employable under precise conditions and would be directly controlled by the United States national command authority.

Efforts to enhance the operational credibility of U.S. nuclear forces in Europe are not perceived to be necessary or advisable in today's political environment. In fact, it seems that drawing attention to NATO's nuclear forces is viewed by policy makers as a risky proposition. Modernization attempts during the late 1980s and in early 1990-1991 failed to attain the required political commitment, and were terminated by the collapse of the USSR. As the weapons systems continue to age, the question is not simply going to vanish—on the contrary, it is likely to become an issue, especially if the state of international uncertainty persists. The dilemma may nonetheless grow in the future, owing in part to the general stockpile issues discussed earlier in this chapter. "In the current political context, however," as David Yost points out, "any U.S. [or NATO] proposal for near-term modernization of the U.S. nuclear posture in Europe could place nuclear weapons at the center of the Alliance's agenda and stimulate an unnecessary, divisive, and counter-productive debate that could lead to the removal of the remaining U.S. nuclear weapons in Europe."[61]

3. No-First Use Advocacy and Associated Declaratory Policy Issues

As the United States and its NATO Allies search for a way to publicly articulate a nuclear declaratory policy, one of the concepts often called for is the adoption of a no-first use policy. In 1992, Les Aspin, then Chairman of the House Armed Services Committee, suggested that with the demise of the Soviet threat and in close coordination with NATO Allies, the United States should reconsider the policy of first use, which, if it remained intact, could "undercut non-proliferation efforts by legitimizing nuclear weapons and nuclear use."[62] Also in 1992, a study co-written by Ashton Carter, William Perry, and John Steinbruner suggested a concept of "cooperative security," under which "doctrines covering the residual nuclear forces—themselves much shrunken and simplified—would foresee retaliation only, and that only in response to first nuclear use and without any automatic response."[63]

One particularly noteworthy proposal on no-first use was advanced by David Gompert, Kenneth Watman, and Dean Wilkening in a RAND study conducted in 1995. Nuclear deterrence, they note, was a fixture of U.S. and NATO security strategy throughout the Cold War. During

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[61] David S. Yost, U.S. Nuclear Weapons in Europe: Prospects and Priorities. A draft version of a paper presented at Sandia National Laboratories on August 20, 1996, p. 40.
[62] Les Aspin, "From Deterrence to Denuking: Dealing with Proliferation in the 1990s," House Armed Services Committee, February 18, 1992, pp. 15-16.
[63] Ashton B. Carter, William J. Perry, and John D. Steinbruner, A New Concept of Cooperative Security. Washington D.C.: Brookings Institution, 1992, p. 12.

this period, nuclear deterrence had two fundamental purposes: (1) to deter a possible nuclear attack on the United States and its NATO Allies; and (2) to deter the possibility of an attack by numerically superior Soviet conventional forces through Central Europe.[64] According to this study, "While the first purpose transcends the end of the Cold War, the second does not. Not only is the Soviet threat to Europe gone, but the United States today finds itself the world's premier conventional military power."[65] Simultaneously, the United States and its Allies are today faced with a plethora of new threats, especially those of WMD employment from proliferant nations on NATO's periphery. While nuclear deterrence currently is saddled with some ambiguous constraints (in the form of U.S. negative security assurances), and while "some calculated ambiguity about U.S. retaliatory intentions serves a useful purpose," according to these no-first use advocates, "deterrence is not well served if U.S. declaratory policy is so unclear that aggressors do not understand the possible consequences of using biological or chemical weapons."[66] In essence, the study asserted that the current policy "keeps in place a vestige of the Cold War (that is, a nuclear first-use policy to deter conventional attacks)," thereby legitimizing WMD first use and undermining the ability to "deter biological and chemical attacks at the very time that the spread and possible use of such weapons is of more concern than ever."[67]

Therefore, Gompert, Watman, and Wilkening argue, in order to "exploit effectively the enormous deterrent value of nuclear retaliation," the United States and its NATO Allies should adopt a policy of no-first use, reserving the right to reply against the entire spectrum of WMD threats with nuclear weapons:

> Such a declaratory policy represents a change from current U.S. policy not only by being explicit about the possibility of a nuclear response to a biological or chemical attack, contrary to current U.S. negative security assurances, but also by specifying that a nuclear response would be considered *only* in the event that an opponent uses a weapon of mass destruction first, contrary to current NATO declaratory policy.[68]

In other words, if adversaries come to believe that the United States and its NATO Allies consider WMD first use to be illegitimate, those contemplating WMD use should also consider that NATO will respond with force, possibly including nuclear retaliation.[69]

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[64] David Gompert, Kenneth Watman, and Dean Wilkening. "Nuclear First Use Revisited," in Survival, Vol., 37, No. 3, Autumn 1995, p. 27.
[65] Ibid., p. 27.
[66] Ibid., p. 29.
[67] Ibid., p. 33.
[68] Ibid., p. 36.
[69] Ibid., p. 40.

It would be difficult to deny that there is a contradiction in current U.S. and NATO declaratory doctrines, especially due to U.S. negative security assurances. However, other factors must be taken into account regarding a no-first use doctrine. First, most policy makers and realist analysts believe that no-first use pledges on the part of adversaries are simply rhetorical formulations which, when subjected to the pressures of international war and conflict, may prove to be meaningless. According to some analyses of documents captured in East Germany, Soviet war plans revealed an intention to immediately employ nuclear weapons on the battlefield in Central Europe, even though the Soviet Union had in 1982 clearly articulated a no-first use pledge as an element of its foreign and defense policy. It is necessary to note that the Russian Federation formally renounced the USSR's no-first use pledge in 1993. Second, European NATO Allies point out that the United States is comparatively isolated from the dangers of conventional conflict. This is not the case in NATO Europe. The Europeans will therefore probably not endorse any measures or initiatives which are likely to reduce the chances of a U.S. nuclear response in the face of aggression against NATO countries. Finally, there is a widespread perception among NATO policy makers that there is enduring value in measured ambiguity, creating doubt in the minds of potential aggressors. In the end, a no-first use policy would limit and constrain the Alliance's ability to respond to the wide array of threats that may arise in the future. Most fundamentally, as David Yost writes, a no-first use pledge

> would be inconsistent with the established policy assumptions of NATO European security elites, many of whom hold that no-first use would undermine the credibility of U.S. extended deterrence commitments and would erode (if not destroy) the rationale for maintaining U.S. nuclear forces in Europe ... No-first use could therefore undermine Alliance cohesion and security and could even increase the risks of nuclear proliferation in NATO Europe, in view of probable perceptions of a U.S. disengagement from long-standing nuclear commitments.[70]

Other policy debates, however, could pull the no-first-use issue closer to center stage. One of these is the subject of NATO enlargement.

4. NATO Enlargement, Nuclear Weapons Free Zones, and Arms Control

In September 1995 NATO released the long-awaited *Study on NATO Enlargement*. One of the central questions regarding the enlargement debate involves whether new Alliance members would be asked or required to accept the stationing of nuclear weapons on their territories. The Enlargement study addressed this issue directly in paragraph 58:

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[70] David S. Yost, U.S. Nuclear Weapons in Europe: Prospects and Priorities, p. 44.

> The coverage provided by Article 5, including its nuclear component, will apply to new members. There is no *a priori* requirement for the stationing of nuclear weapons on the territory of new members. In light of both the current international environment and the potential threats facing the Alliance, NATO's nuclear posture will, for the foreseeable future, continue to meet the requirements of an enlarged Alliance. There is, therefore, no need now to change or modify any aspect of NATO's nuclear posture or policy, but the longer term implications of enlargement for both will continue to be evaluated. NATO should retain its existing nuclear capabilities along with its right to modify its nuclear posture as circumstances warrant.[71]

While this statement clearly does not mandate a requirement to station nuclear weapons in the new member states, it does embody a central philosophy: neither the United States nor its NATO Allies accord the Russian Federation the right to veto or modify the enlargement process. Decisions based on nuclear weapons matters will be driven strictly by NATO's internal decision process. Russia will be informed of the results, not invited to participate in the deliberations.

The Russian Federation has nonetheless not taken NATO enlargement lightly. Some Russians have threatened wide-spread nuclear deployments to counter NATO's decisions. Russia firmly believes that deterrence within the scope of the enlarged NATO Alliance is not conceivable without nuclear weapons. Oleg Grinevsky, a Russian diplomat, indicated as much in an address in April 1996 when he said that the "provision of security for considerably growing territories simultaneously with reduction of West European armies can only be achieved by a greater reliance on the American nuclear guarantees in Europe. So NATO's expansion will mean inevitable 'nuclearization' in approaches to provision of European security."[72] Reports suggest that Russian reactions to NATO enlargement could include redeployments of tactical nuclear weapons in Belarus and on naval vessels in the Baltic. Pavel Grachev (Minister of Defense until July 1996) and Yevgeny Primakov (currently Foreign Minister) have threatened the renunciation of certain arms control regimes (e.g., the INF and CFE treaties). Pavel Felgengauer, a frequently cited Russian journalist on military matters, writes that "high-ranking officials of the Russian Defense Ministry by no means rule out the possibility that in response to, say, the integration of Poland into NATO's military structure, Moscow might deploy hundreds of tactical nuclear warheads in

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[71] Study on NATO Enlargement, Brussels: The North Atlantic Treaty Organization, September 1995, para. 58.

[72] Oleg Grinevsky, "Europe and the Future Role of Nuclear Weapons," a paper presented at the Swedish National Defense Research Establishment seminar, April 24, 1996, p. 3.

Kaliningrad Province, targeting them on Polish military and strategic facilities needed to support the operations of mobile attack forces."[73]

Some of the most provocative responses have been suggested by Anton Surikov, a strategist who is reported to have connections to the Russian military, especially the General Staff. Several sources have described him as having active relationships with General Staff officers. In an October 1995 report under the auspices of INOBIS (the Institute of Defense Studies), Surikov, the General Director, attributes plans for NATO enlargement to a united Germany. "The FRG is the main instigator of NATO's eastward expansion ... In fact, we are dealing with a resumption of German expansion in the eastern and southeastern direction twice interrupted in this century and being accomplished ... primarily by political and economic methods under the American 'nuclear umbrella.'"[74] Surikov believes that NATO enlargement is planned to be a multi-phased process driven also by an American elite "looking for ways to reinforce the U.S. leading position on the European continent":

> Western policy with respect to NATO's future is seen as an attempt to isolate Russia and ultimately oust it from Europe. An eastward expansion of the NATO bloc obviously is inevitable and is planned in several stages. In the first stage (over 2-3 years) Poland, Czechia, Slovakia, and Hungary [the Visegrad Four] will be accepted in NATO. In the second stage (tentatively by 2000) it is planned to accept Slovenia, Romania, Bulgaria and, if possible, also Lithuania, Latvia, and Estonia into NATO. The inclusion of Finland and Austria in NATO is likely in this same stage. Finally, the acceptance of Ukraine in NATO is not excluded in the third stage (approximately in 2005).[75]

In order to counter NATO enlargement, Surikov calls for "creating a military bloc of CIS countries, particularly the involvement of Central Asian countries in confronting the NATO bloc." He calls for close military cooperation with Belorus and the "deployment of tactical nuclear weapons on the territory of Belorussia, in the Kaliningrad Special Area, and on naval ships in the Baltic Fleet." Furthermore, he asserts that Russia "has all the legal and moral grounds for introducing troops to the Baltics," and he assumes that "no one in the West has plans to fight Russia over the Baltics." Finally, "in case of a total break in relations with the United States,"

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[73] Pavel Felgengauer, "Russian Generals Aren't Interested in NATO Countries' Good Intentions," Sevodnya, June 23, 1996, in Current Digest of the Post-Soviet Press, July 19, 1996, p. 31.

[74] V.M. Surikov, "Conceptual Provisions of a Strategy for Countering the Main External Threats to Russian Federation National Security." Moscow: Institute of Defense Studies, INOBIS, October 1995, p. 6.

[75] Ibid., p. 6. Ironically, if it were possible for the West to have such an organized and far-sighted strategic vision, it would be nothing short of a miracle. Surikov seems to neglect the fact that NATO is presently comprised of 16 Western democracies, any one of which can veto any accession. Furthermore, the process of strategy making is immensely more arduous within NATO than Surikov seems to know or to want to believe.

Surikov argues for a Russian threat to proliferate weapons of mass destruction to countries like Iran, Iraq, and Algeria, and to place "Russian troop contingents and tactical nuclear weapons on the shores of the Persian Gulf and the Strait of Hormuz."[76]

In order to moderate an anticipated confrontation between Western governments and the Russian Federation, various groups, especially non-governmental organizations, have revived concepts dating from the 1950s of a nuclear-weapons free zone (NWFZ) in some or all parts of Western and Central Europe. Several ideas have been put forward, including the "Atlantic-to-the-Urals" and the "Baltics-to-the-Caucasus" concepts.[77] The underlying philosophy is that, if NATO enlargement is to proceed, a way to make it less threatening to Russia would be to remove U.S. nuclear weapons from Europe. Thus, the proponents of these ideas argue, Russia would no longer perceive NATO as a threat to its security and Europe could simultaneously be "de-nuclearized."

However, there are several significant problems with this approach. As pointed out in Scenario #4 of this work, what a NWFZ would accomplish is to effectively remove the presence of U.S. nuclear weapons from Europe and, with them, the perception of a reliable American nuclear umbrella. This has been a long-standing and enduring goal of Moscow's foreign and military policy, dating from the 1950s. Even more significantly, however, the establishment of a NWFZ would preserve the Russian ability to strike Central and Eastern Europe with nuclear weapons systems located at sea or in the Russian Federation. Russia's capacity to target Europe with nuclear-armed tactical aviation and long range aviation would be preserved, while much of NATO's capability in Europe to respond in kind would be lost. Thus, from a security perspective, the concept of a NWFZ is really one-sided, providing Russia a significant advantage.

The issue of NATO enlargement is likely to bring nuclear weapons back into the public spotlight. With increasing nuclear complications, NATO governments might find it difficult to reach consensus on the scope and purposes of NATO enlargement. As David Yost writes, it is possible that the "concept of solvency might be raised. Is the United States taking on more responsibilities than are consistent with U.S. capabilities?" In addition, "U.S. nuclear forces in Europe might appear to some as sources of controversy and even of danger for U.S. national security rather than as policy instruments with multiple political and strategic functions."[78] Debates on these questions could affect the viability of NATO's nuclear posture.

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[76] Ibid. This represents a compilation of ideas cited from pp. 10-13 of the report.

[77] These ideas have been noted by the authors at various meetings throughout their research. It must be emphatically stated that the authors do not propose or endorse these concepts and do not correlate any of these notions to Scenario #4 and NATO enlargement.

[78] David S. Yost, U.S. Nuclear Weapons in Europe: Prospects and Priorities, p. 17.

D. FORCE CHARACTERISTICS

To the extent that NATO's nuclear forces remain an operational and safe force under the constraints of a nuclear test ban, the force structure under this scenario will continue to reflect the present arrangements in NATO Europe. Figure 4.2 is a representation of the present force characteristics.

Nuclear Force Characteristics: Scenario #1 The Status Quo		
	# of US Weapons in Europe	Unchanged Reportedly 480*
	NATO Nuclear Consultation	YES
	NATO-Wide Capability	YES
	US Article 5 Strategic Linkage	YES
	# of US Weapons Basing Countries	Unchanged (8)**
	Level of Military Readiness	Unchanged
	Level of Military Flexibility	Unchanged

*NRDC Notebook in the Bulletin of the Atomic Scientists, Nov/Dec 1995, p. 74.
**NATO, DPC, "Enhancing Alliance Collective Security: Shared Roles, Risks, and Responsibilities in the Alliance." Brussels, December 1988, para. 36.

Figure 4.2 Force Characteristics

E. ANALYSIS AND CONCLUSIONS: THE STATUS QUO AND EUROPEAN STABILITY

As NATO faces the future, it is virtually certain that its nuclear weapons posture and policies will come under closer and increasing scrutiny. In this light, with regard to NATO and its 16 nations, the following observations seem especially telling:

> A persistent and repeated error through the ages has been the failure to understand that the preservation of peace requires active effort, planning, the expenditure of resources, and sacrifice, just as war does. In the modern world, especially, the sense that peace is natural and war an aberration has led to a failure in peacetime to consider the possibility of another war, which, in turn, has prevented efforts needed to preserve peace. Perceiving the source of a new war in a time of peace is, to be sure, a difficult task.[79]

[79] Donald Kagan cited in Michael Boldrick, "The Nuclear Posture Review: Liabilities and Risks," p. 81.

1. Deterrence and Politics

In light of the current ambivalence within NATO regarding its nuclear deterrent as well as an international context favorable to disarmament initiatives, it seems reasonable to assert that the legitimacy of NATO's nuclear status quo could be undermined. As Michael Boldrick writes, "arms control treaties, the breakup of the former Soviet Union, and the success of high-technology conventional weapons during the 1991 Persian Gulf War have collectively accelerated efforts to fold the [U.S. and NATO] nuclear umbrella."[80] There seems to be an increasing emphasis on former Defense Secretary Robert S. McNamara's assertion that "nuclear warheads are not military weapons in the traditional sense and therefore serve no purpose other than to deter one's opponent from their use."[81] If the Alliance continues to avoid the nuclear debate, nuclear rollback will probably occur.

Alliance cohesion will undoubtedly be subject to greater strain if nuclear weapons continue to be marginalized. The 1994 Nuclear Posture Review is a good example of what NATO might expect in terms of Alliance relationships. According to one account, "Racked by dissension between civilian and military officials, caught in a crossfire of political and military viewpoints, constrained by budget decisions favoring conventional forces, and blinded by unbending trust in arms control agreements, the Nuclear Posture Review fell short of completing an objective analysis of U.S. national security needs." In Michael Boldrick's view, "that failure may come at a terrible price. The status of the United States as the world's only remaining superpower cannot rest on superior technology and smart weapons alone in a world likely to see more, not fewer, nuclear armed states."[82] The connection between the Alliance's nuclear weapons and the ability of NATO to act cohesively is often mentioned by officials, both in public and in private. The failure to confidently promote what is often considered the single most important common ground for NATO—the imperative of war-prevention through nuclear deterrence and associated measures—is not likely to strengthen Alliance cohesion.

2. Strategic Concerns

With regard to Russian WMD threats, it is probable that they will increase in both frequency and intensity unless a mutually acceptable framework for discussion is devised. This is primarily within the context of the probable enlargement of the Alliance. Russia cannot pose a

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[80] Ibid., p. 81.
[81] Robert McNamara, Blundering Into Disaster: Surviving the First Century of the Nuclear Age. New York: Pantheon Books, 1986, p. 16.
[82] Michael Boldrick, "The Nuclear Posture Review: Liabilities and Risks," pp. 89-90.

credible conventional threat to NATO today or in the foreseeable future. Russia therefore relies heavily on its nuclear arsenal, and this trend is not going to subside in the immediate future. Therefore, assuming that NATO enlargement proceeds and that Russian governmental attitudes toward enlargement remain unchanged, Russia is likely to at least increase the intensity of its nuclear rhetoric. One cannot overlook the possibility of the Russian redeployment of tactical nuclear weapons. Although NATO governments are not likely to respond to these measures by offering Russia a veto over NATO enlargement decisions, they will significantly complicate the enlargement process. This will be especially true in terms of public opinion.

Scenario #1 does not foresee a significant change in the level of "new" WMD threats, although the prognosis is unclear. By maintaining ambiguity about nuclear weapons options, NATO and the United States could minimize controversy and keep most proliferators guessing. However, saying nothing could be costly. In declining to clearly state a policy, the United States and its NATO Allies lose a valuable opportunity to put future proliferators and new nuclear weapons states on notice that they risk devastation if they use nuclear weapons against Alliance interests.[83] However, the presence of U.S. nuclear weapons in Europe might well influence employment decisions made by proliferants, particularly in contingencies involving NATO nations.

3. WMD Proliferation

It is difficult to assess the impact that Scenario #1 would have on external proliferation. While some argue that the existence of U.S. nuclear weapons in itself acts to instigate proliferation, others seem to think that these weapons constrain proliferation because they may raise the risks in acquisition. NATO has deployed nuclear weapons in Europe for over 45 years. Except for Israel, whose security motivation was inherently conspicuous, there has been no nuclear proliferation on NATO's periphery. At the same time, numerous countries have acquired biological and chemical weapons. Given the character of the regimes in Algeria, Iraq, Iran, Libya, and Syria, it is reasonable to assume that given the opportunity, these states would acquire weapons of mass destruction for local purposes aside from NATO and the United States. Therefore, the presence of U.S. nuclear weapons in Europe will probably not have a major influence on whether these countries choose to acquire such weapons.

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[83] Michele A. Flourney, "Implications for U.S. Military Strategy," in New Nuclear Nations: Consequences for U.S. Policy. Robert D. Blackwill and Albert Carnesale, eds. New York: Council on Foreign Relations Press, 1993, p. 147. As discussed in Chapter 3, achieving consensus on a "clear" and "unambiguous" policy within NATO may be quite challenging, especially in light of the concerns regarding the negative security assurances relating to the NPT.

Finally, in addressing internal proliferation, it seems clear that the focus of any significant shifts would be centered on whether the U.S. stockpile can be confidently maintained under the constraints of the CTBT. As Kathleen Bailey indicates, "U.S. nuclear weapons designers have always stated that they need nuclear testing to determine if designs in the stockpile are continuing to work as planned." The current U.S. administration has not found this argument convincing. It has eliminated nuclear explosive testing altogether and has cut the funding for alternative stewardship programs. These are "political and financial decisions, not technical or national security ones. Thus, the question is: Will the nations depending on the U.S. nuclear deterrent believe the politicians or the actual designers of the weapons?"[84] If one assumes that the designers are in fact the experts and that confidence in the stockpile will decline over time, it may become a matter of *when* and not *if* Alliance members will question the credibility of the U.S. nuclear umbrella. At that point, the impetus for acquiring their own weapons could increase, at least in some nations, especially if the multi-polar world continues to provide a plethora of threats and security challenges.

In the final analysis, the collapse of the bipolar world is likely to introduce many complexities that were suppressed by the two superpowers during the Cold War. As Patrick Garrity indicates, "as the power in the international system becomes more diffuse, and as candidates for great and regional power status begin to assert distinct interests and ambitions, nuclear relations among states could take on more of a multi-polar character.... As the old nuclear order and relationships decay, new relationships are bound to emerge, and these may be more complex and interrelated than we have previously experienced."[85] It is clear that there will be future pressures on the nuclear force posture of the Atlantic Alliance, based on the four major areas discussed in this chapter. The traditional Alliance posture of "constructive ambiguity" may no longer be effective in a multi-polar world. (Figure 4.3 summarizes the analysis.)

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[84] Kathleen C. Bailey, Strengthening Nuclear Non-Proliferation. Boulder: Westview Press, 1993, p. 92.
[85] Patrick J. Garrity, "The Next Nuclear Questions," in Parameters, Vol. XXV, No. 4, Winter 1995-96, p. 99.

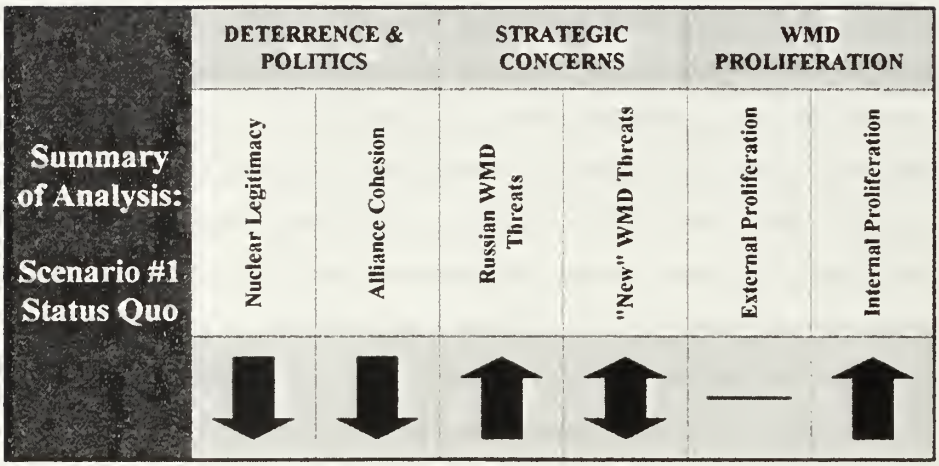

Figure 4.3 Summary of Analysis

F. KEY FINDINGS

- **The future reliability, safety, and credibility of the U.S. nuclear stockpile is uncertain, as a result of several factors:**
  - **the unproven viability of the SSMP regime**
  - **current and long-term inefficiencies and gaps in DOE's stockpile surveillance program**
  - **the persistent failure to commit to a national tritium production source**
  - **DOE's inability to adequately fabricate plutonium components**
  - **the substantial budgetary shortfall for the SSMP and stockpile surveillance programs, as a consequence of the current Administration's budgetary priorities toward DOE**
- **The vagueness of NATO's current nuclear declaratory doctrine is likely to influence the long-term political and military viability of NATO's nuclear deterrent.**
- **Although not necessarily credible with most politicians and policy elites, no-first use proposals and nuclear weapons delegitimization efforts are increasingly capturing the public spot light.**
- **Impending debates regarding nuclear weapons in light of NATO enlargement are likely to call attention to NATO's nuclear forces in the future.**

V. SCENARIO #2:
A UNILATERAL WITHDRAWAL

...nuclear questions have been tackled outside the [NATO] nuclear planning group only by a small bunch of nuclear dinosaurs in military or academic circles–inhabitants of a nuclear Jurassic Park or representatives of an ancient century. If the public took notice of nuclear questions at all, then [it was] only with respect to loose nukes in the former Soviet Union or some ounces of plutonium in German airports.

Karl-Heinz Kamp
Konrad-Adenauer-Stiftung[1]

Currently this is not a political issue in this country or in Europe. We should not attempt to turn it into one.

Foreign Service Officer
U.S. Department of State[2]

A. INTRODUCTION

With the end of the Cold War and the collapse of the Soviet Union, NATO and the United States, the Alliance's primary nuclear guarantor, sought to adjust nuclear force levels and reduce the Alliance's emphasis on nuclear weapons. The Rome Declaration and the Alliance's New *Strategic Concept* of 1991 acknowledged that the threat of a massive Warsaw Pact invasion had subsided. With this recognition came suggestions that U.S. nuclear forces in Europe be removed entirely, reduced to some extent, or simply maintained in their present form.[3] The 1994 United States Department of Defense Nuclear Posture Review (NPR) represented a U.S. attempt to determine the appropriate post-Cold War rationale for the size and shape of the U.S. nuclear force. In a press conference following the release of the NPR, the Chairman of the Joint Chiefs of Staff, General John Shalikashvili, indicated, "The United States will retain all of the capabilities

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[1] Remarks made during a presentation to NATO's Nuclear Planning Group, 1996.
[2] Interview conducted by authors in Washington D.C., March, 1996.
[3] For example, Air Force General Charles Horner, former Commander of the U.S. Space Command, was quoted as saying "The nuclear weapon is obsolete." in Stephen S. Rosenfeld, "Fifty years after Hiroshima, the role of nuclear weapons is undefined," The Houston Chronicle, 21 February, 1995, section A, Opinion, p. 17.

we need to sustain our commitments overseas...And of course our dual-capable aircraft, those capable of performing conventional and nuclear missions, will retain the ability to deploy when and if the situation may require to support our allies and important interests abroad."[4] In essence, the NPR reaffirmed the current posture and deployment of non-strategic nuclear forces in Europe.[5]

While it is clear that the U.S. government intends to retain the remaining NSNFs in Europe for the foreseeable future, nuclear experts both inside and outside the U.S. government indicate that certain events could lead to a rapid reassessment of the prudence and utility of deploying U.S. NSNFs overseas. Such events could alter public opinion regarding the continued need for NSNFs in Europe, or raise safety concerns about them. For example, a nuclear accident (involving either non-military or military nuclear applications), a security breach at a nuclear weapons facility, or the targeting of a NATO nuclear storage facility in a regional, non-nuclear conflict could have dramatic effects. Nuclear use by either state or non-state actors could also lead to such an outcome. Furthermore, U.S. Congressional action could necessitate such a move, or the U.S. executive branch might determine that there are other ways to satisfy U.S. deterrence requirements.

This chapter has three aims. First, it examines various events which might lead the U.S. government to undertake a unilateral withdrawal of NSNFs from Europe. Second, it identifies the characteristics of two broad schemes by which the U.S. might seek to provide alternative nuclear assurances to Europe. Third, it analyzes the effects of a unilateral withdrawal on European stability in terms of political, proliferation, and threat factors.

B. ASSUMPTIONS

If, as a result of any of the above-mentioned circumstances, the U.S. government should find it necessary to withdraw the NSNFs from Europe, it is likely that the government would attempt to provide its Alliance partners with evidence of alternative security instruments designed to convince both friend and foe that the U.S. would remain committed to the defense of its security interests in Europe. Such reassurances might fall into either of two categories: reconstitution (i.e., arrangements to support a commitment to redeploy nuclear forces to Europe

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[4] United States. Department of Defense. Office of Assistant Secretary of Defense (Public Affairs). News Release N0. 546-94. Press Conference with Secretary of Defense William J. Perry, General Shalikashvili, Chairman, JCS, Deputy Secretary of Defense John Deutch, Mr. Kenneth H. Bacon, ATSD-PA. Washington, D.C. 22 September, 1994, p. 3.

[5] United States. The White House. A National Security Strategy of Engagement and Enlargement. Washington, D.C. February 1996.

in future times of crisis), or substitution (i.e., increased reliance on maritime assets instead of forward deployed NSNFs, and/or increased reliance on U.S.-based ICBMs or air assets).

C. DEVELOPING THE SCENARIO: THE ROAD TO A UNILATERAL WITHDRAWAL

1. Delegitimizing Events

Whether from France, Germany, the United States or Russia, those who follow nuclear affairs consistently point out that nuclear issues are in normal circumstances (i.e., except for crises and confrontations with a nuclear dimension) non-issues for the average citizen. Indeed, they "wouldn't even make the top ten cut" of national security concerns on the public mind, notes one high-level U.S. official.[6] Another view commonly expressed by such experts is that this lack of public interest is, perhaps, best. Too much public attention, they point out, could lead to ill-conceived calls for the denuclearization of world politics or at least rapid weapons cuts. Although no experts purport to be certain that public attention is "bad," most cite the negative publicity surrounding the "Euromissiles" crisis of the late 1970s and early 1980s as a nightmare scenario that they would not wish to repeat. Additionally, it could be seen as unnecessarily provocative and politically risky to bring NATO's nuclear force into the public eye at the same time the Alliance is trying to enlarge a European region of peace and stability.

a. Nuclear Accident

Public awareness, however, is a notoriously fickle commodity. An accident relating to either a civilian nuclear site or nuclear forces might initiate a chain-reaction of public opinion leading to calls for the total denuclearization of a country or region. On April 26, 1986, just such an event occurred at the Chernobyl nuclear facility in the Ukrainian region of the USSR where a reactor meltdown and explosion led to numerous deaths and a media "fire storm." In response, mass public demonstrations decried the use of nuclear power in many European countries. "In West Germany, the anti-nuclear Greens quickly staged protest rallies under banners bearing the slogan CHERNOBYL IS EVERYWHERE."[7] When asked at the time during a televised interview whether he feared Chernobyl would spawn a new round of calls to remove NATO nuclear weapons from Europe, then Secretary of State George Schultz, attempting to

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[6] Interviewed by the authors in Washington D.C. on 28 March 1996.
[7] Greenwald, John. "Deadly Meltdown." Time. , U.S. Edition. Time Inc., May 12, 1986: p. 38.

discredit the patently effective movement, replied, "The protesters are always there."[8] Indeed, these opposition groups seized the issue, mobilizing public support for their campaign against nuclear power. This support, however, was short-lived and failed to translate to more general calls for the total denuclearization of Europe. While several countries made pledges to end their nuclear power programs or halt construction of new nuclear power plants, no country called for a complete nuclear ban. In fact, those countries that did curtail their existing nuclear programs in the wake of Chernobyl ultimately acknowledged that, in the absence of other cheaper and safer means of generating electricity, their nuclear power programs would resume.[9]

As one U.S. official stated when asked about the possible effects of such an event on the public attitude toward nuclear weapons, "We had Chernobyl, and the elimination of nuclear weapons did not occur."[10] It is, however, worth noting that, while for the West Europeans Chernobyl resulted in a thorough scare and a financial loss necessitated by the destruction of contaminated agricultural products, in Ukraine, lives were lost, cities were abandoned, and the long-term damage has yet to be fully assessed.[11] This experience of the Ukrainians at Chernobyl led to a declaration by the legislature in 1990 that it wanted the republic to be a nuclear free zone.[12] Chernobyl, however, remains in operation in 1996, and Ukraine is in the process of removing all former Soviet nuclear weapons from its soil.

The long term effects of a nuclear incident are unclear and probably scenario-dependent. In the case of Chernobyl, as in other such events, the public reaction of the neighboring European nations was to decry the nuclear energy industry, but 10 years later, not only is nuclear power still an acceptable source of energy in Europe, but nuclear weapons also remain. Even Ukraine, the site of the worst nuclear accident to date, has yet to heed the popular call for total denuclearization.

Another type of nuclear incident would involve an accident with an actual nuclear weapon. Such an occurrence could result in a significant amount of publicity, which could, in

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[8] Shultz, George. "Secretary Shultz's Interview on *The Today Show*, Apr. 30, 1986. n 2 Press Release. Department of State Bulletin. July, 1986. From LEXIS-NEXIS.

[9] Vera Rich. "An ill wind from Chernobyl: radioactive fallout over Europe." New Scientist, Vol. 130, no. 1765, pp. 26+. From LEXIS-NEXIS.

[10] Based on an interview with a U.S. official in Washington, D.C., March 1996.

[11] "The immediate effect of the blast was 31 dead from radiation poisoning, with a still unknown number of deaths that may be caused by long-term radiation sickness. The accident also caused unquantifiable economic losses for the USSR and Europe." see Chernobyl Environment and Trade Impacts (CHERNOB Case). TED Server, Internet.

[12] Peter Maass. "Ukrainian Leader Asks removal of Soviet's Nuclear Weapons." The Washington Post. August 30, 1991. First Section, p. A29.

turn, generate widespread public opposition to a continued nuclear presence within a state or region. The practical impact of such opposition would depend on the circumstances. Ultimately the political environment and the specific aspects of the event (i.e., the extent of damage, loss of life, proximity to Western Europe, etc.) are likely to weigh heavily on any outcome. In any case, numerous accidents—short of a nuclear detonation—involving U.S. nuclear weapons have occurred. One example of such an event follows:

> On January 17, 1966, a B-52 and a KC-135 tanker collided during an airborne alert refueling mission near Palomares, Spain. The bomber exploded in mid-air and four hydrogen bombs fell to earth. Seven crew members were killed, the conventional explosive materials from two of the bombs went off on ground impact, spreading considerable radioactive material on Spanish soil. One hydrogen bomb was lost at sea for almost three months.[13]

This accident "made banner headlines in the Spanish press and greatly upset the Spanish public,"[14] yet, for a time, the weapons remained. Sixteen years after the accident when Spain joined NATO in 1982, no prohibition on the deployment of U.S. nuclear weapons in Spain existed. However, in 1986, the Socialist government called for a public referendum on Spain's continued NATO membership and included as one of several conditions for continued NATO affiliation a ban on the deployment of nuclear weapons on Spanish soil. This ban was subsequently interpreted to allow for a "subtle distinction between the 'deployment' of nuclear weapons and the 'visits' made by U.S. [nuclear-armed] warships."[15] Today, Spain hosts no U.S. nuclear weapons.[16]

A similar incident occurred in January 1968 when a U.S. B-52 bomber crashed near Thule Air Base, Greenland. In this case radioactive material from the four bombs on board which had burned, but not exploded, contaminated the crash area. Denmark later adopted a policy banning any deployment of nuclear weapons on its territory.[17] Clearly concerned about the possibility and consequences of future accidents involving U.S. weapons, U.S. Secretary of Defense McNamara in 1968 ended the practice of allowing U.S. bombers to fly training or alert

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[13] Department of Defense, "Narrative Summaries of Accidents involving U.S. Nuclear Weapons." (released May 15, 1981), p. 29. Cited in Scott D. Sagan. The Limits of Safety: Organizations, Accidents, and Nuclear Weapons. Princeton University Press. Princeton, New Jersey, 1993, p. 178.

[14] Vincente Blay Biosca and Rene Luria. "Spain's contribution to the NATO Alliance." Jane's International Defense Review. Vol. 21, No. 7, July 1, 1988: p. 775.

[15] Ibid.

[16] according to an unconfirmed published report by Robert S. Norris and William M. Arkin in The Bulletin of the Atomic Scientists, November/December 1995, pp. 74-75.

[17] NATO. DPC. Enhancing Alliance Collective Security: Shared Roles, Risks and Responsibilities in the Alliance. Brussels, December 1988, par. 36.

missions with live nuclear weapons on board.[18] Although it is not possible to prove a direct link between these events and the countries' policies regarding the acceptance of nuclear weapons on their territory, it is worth noting that the two countries which were the scenes of the highest-profile and most severe accidents involving U.S. weapons later banned nuclear weapons from being stored at previously acceptable sites.

A slightly different scenario could involve either a waste disposal or a reactor accident with a military nuclear application. Although such an incident could occur anywhere nuclear-powered ships or submarines sail, a recently publicized area of concern is Russia's Kola Peninsula. This area "allegedly contains the world's largest concentration of aging nuclear weapons and unstable nuclear reactors. 182 reactors are operational but there are a further 135 out of commission together with 15 land and sea waste storage sites, believed to contain the equivalent of two-thirds of all the radioactive waste ever disposed of at sea."[19] Several Scandinavian states are afraid that Russian plans to dismantle and dispose of reactors and warheads from over 70 submarines based in the area could lead to dumping at sea or systems disassembly with inadequate attention to radiation hazards.[20]

Although such an occurrence could conceivably result in more severe consequences than an accident such as Chernobyl or Palomares, it is difficult to forecast its effect on public opinion. Essentially, as in the earlier examples, the specifics of the particular event are likely to influence the outcome. The results of any such occurrence, while certainly not positive, will be unpredictable.

b. Security Breach at a Weapons Facility

Following the terrorist attack at the 1972 Munich Olympics, influential Americans became increasingly concerned about the vulnerability of the U.S. nuclear stockpile and bomb-grade material to exploitation by terrorists.[21] Whereas it had always been considered

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[18] Mary Williams Walsh, "A Diplomatic Fallout," The Los Angeles Times. March 7, 1995, Tuesday, Home Edition, pp. 2+. LEXIS-NEXIS.

[19] "Environment report: Nuclear Issues." EIU European Trends. The Economist Intelligence Unit Ltd. December 4, 1995. LEXIS-NEXIS.

[20] Ibid., p. 3 also, The Bellona Foundation, a Norwegian environmental group, released a report on 18 April, 1996 warning of similar problems regarding the disposition of Russia's Northern Fleet. Seemingly adding to the credibility of the report, "Alexandr Nitkin, a former Russian military officer who contributed to the report, was arrested by the Main Intelligence Agency of [the] Russian Federation authorities in February and charged with leaking top secret national information." *from*: The Citizens Nuclear Information Center. Japan. The Tragedy in Chernobyl Continues. Internet release. p. 1.

[21] Larry Collins. "Combating Nuclear Terrorism." The New York Times. December 14, 1980, Sunday, Late City Edition. Section 6; p. 37.

important to protect NATO nuclear forces from a wartime attack, the need to prevent a security breach at storage facilities warranted greater analysis. NATO formed the Senior-Level Weapons Protection Group (SLWPG) in the early 1980s to address such issues. NATO experts recognize that whether a terrorist could actually steal and detonate a weapon is not the only concern. Such an attack on NATO's nuclear forces, even if unsuccessful, could "have a very high public and political impact."[22]

As part of the program to increase the overall security of NATO's nuclear forces, since the mid-1980's the Alliance has undertaken the construction of Weapons Storage and Security Systems (WS^3) vaults which allow co-storage of nuclear weapons and strike aircraft—greatly enhancing survivability and readiness.[23] These vaults also enhance security and minimize damage risks to weapons during transportation to the aircraft from separate facilities. Weapons are stored within these sites in such a way as to make their removal difficult.[24] Acknowledging the formidable task in store for any would-be attacker of a nuclear storage site, Merrill Walters, Director for Nuclear Planning in NATO in 1985-1992, offered this description:

> [The attacker] has to overcome the fences, the cleared areas and the local security forces in place 24 hours a day. He must kill them to gain access to the storage areas and to gain control of a weapon that may or may not have inside devices designed to disable it. The weapon will be larger than a man can carry, and so they will have to have some means of transporting it. He would have to have the outside support structure to enable him to move that weapon, to get that weapon over considerable distances to a sanctuary, under conditions of hot pursuit by security forces, and to do all of that before a reaction team could arrive.[25]

The significant obstacles to success for such an attack are, perhaps, what led to the confident assertion in the July 1996 NATO Review that NATO's bombs for dual-capable aircraft are stored "in highly secure conditions."[26] While it could be possible to discount the chances of a successful effort to breach the security of a nuclear site, one cannot similarly account for the reaction of the public to such an occurrence—whether successful or not. Again, the specific aspects of the

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[22] Merrill Walters in Paul Leventhal and Yonah Alexander, eds. Nuclear Terrorism: defining the threat. the Nuclear Control Institute and the State University of New York Institute on Studies in International Terrorism. Washington: Pergamon-Brassey's, 1986, p.68.

[23] This information came to light during unclassified testimony by Pentagon and USAF officials regarding military construction in 1986. The transcript of this testimony listed 20 bases used by US and Allied DCA at which WS^3 would be constructed. Cited in Michael Posner, "Pentagon Lists Bases for Nuclear Weapons Storage," Capitol Wire Service, Reuters Limited, Washington, Dateline July 9, 1986, Wednesday, A.M. Cycle.

[24] Walters, p. 69.

[25] Ibid.

[26] "Facts on NATO's nuclear posture." NATO Review. WEB EDITION. No. 4, vol. 44. July 1996.

incident (e.g., the degree of damage inflicted by the perpetrators and the type of media coverage) could greatly influence public feeling.

Another scenario involving a storage site might involve the targeting of a site in a smaller-scale regional conflict. By definition, a strike base is one where nuclear weapons are collocated with their delivery means—dual-capable aircraft.[27] Should a European nation that hosts nuclear weapons find itself engaged in a conventional conflict with another nation, it is not unreasonable to assume that such an opponent may wish to target the host country's air force. Patrick Garrity points out that strikes or threats of strikes against "...nuclear materials or facilities could conceivably be used as bargaining chips in a struggle for internal power, or as negotiating leverage with external powers."[28] In the course of such a strike, collateral damage against a nuclear weapons storage facility could not be ruled out.

Given the nature of the WS^3 vaults, it seems unlikely that leakage of nuclear material would result. However, it is conceivable that NATO decision makers and publics alike would share grave concerns about such a strike and its imaginable—no matter how improbable—consequences. Whether such concerns would translate into calls for the removal of U.S. nuclear weapons from the country attacked or other host-countries cannot be reliably forecast.[29]

c. Nuclear Use

Should the half-century nuclear taboo be broken, particularly if such an explosion occurs near the NATO-European area, it is reasonable to assume that many in Europe and the U.S. might begin to ask a series of potentially troubling questions. For example:

- Did the presence of U.S. weapons affect the decision taken to detonate the weapon? If so, how?
- Did deterrence fail?
- If so, why keep the U.S. weapons around?

Two scenarios are worthy of attention in this regard: first, that of a nuclear detonation occurring during the course of a regional war between states; second, that of nuclear employment by a non-

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[27] United States, The General Accounting Office, Report to the Chairman, Subcommittee on Readiness, Committee on the Armed Services, House of Representatives: NATO Nuclear Bases, GAO/NSIAD-94-84, Washington, D.C., 1993, p. 2.

[28] Patrick Garrity. "The Next Nuclear Questions." Parameters Winter 1995-96: p.105.

[29] Turkey in particular lies in what could be described as a "dangerous neighborhood." Also, one cannot rule out a future increase in the level of hostilities between NATO partners, Greece and Turkey, or the involvement of either or both countries in a Balkan conflict. According to various published sources, cited elsewhere in this work, both states reportedly host U.S. nuclear weapons.

state actor, possibly in pursuit of terrorist or war-fighting aims. Other combinations of actors and scenarios can be imagined, but for the sake of analysis these two examples should suffice.

Patrick Garrity has described an "unsuccessful" case of nuclear use that might occur in a future regional war:

> ...[if the nuclear strike] had truly horrific consequences—the immediate death of hundreds of thousands, well covered by the international media, with the spread of fallout causing panic and affecting the health of tens of millions outside the combat zone. The reaction regionally and locally, would undoubtedly be severe, perhaps leading to extraordinary pressure for international punishment of the guilty parties and a general revulsion against nuclear weapon programs in all states.[30]

Should this event occur in a region in which NATO's nuclear force had been intended to deter nuclear use, such a deterrence failure might lead to a loss of the public and political support necessary for NATO to remain a nuclear Alliance.[31] Others, however, find it difficult to imagine, for example, a German decision maker after witnessing such a scene near his country urgently demanding the removal of the U.S. umbrella—to extend the metaphor—at a time when the "nuclear rain" may threaten to fall on his country.

Nuclear use by a non-state actor could raise similar questions. According to figures published in the New York Times in 1980, in the 1970s, no fewer than 60 nuclear threats were made against U.S. cities. Most threats were accompanied by demands for money or compliance with ideologically-inspired conditions. While it is true that in no case did an actual nuclear device back up such threats, one cannot discount the possibility of a future threat to an American or foreign city involving an actual device or, worse yet, a nuclear detonation.[32] President Clinton echoed this sentiment in his 1995 Commencement Address at the U.S. Air Force Academy. "As horrible as the tragedies in Oklahoma City and the World Trade Center were, imagine the destruction that could have resulted had there been a small-scale nuclear device exploded there."[33] Similarly, a non-state actor engaged in an ideological conflict with a state actor might acquire and use or threaten to use a nuclear device in order to achieve its aims.

Again, some have argued that the response to such an occurrence would be a general distaste "for things nuclear," which might extend to calls for general nuclear

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[30] Garrity. p.105.
[31] Richard Dittbenner. "Nuclear Costs." Letter to Defense News. 22-28 July, 1996, p. 14.
[32] Collins, p. 37.
[33] President William J. Clinton cited in Colonel Guy B. Roberts, USMC. "Nuclear Weapons-Grade Fissile Materials: The Most Serious Threat to U.S. National Security Today?" Airpower Journal, Special Edition: INSS, 1996, p. 5.

disarmament.[34] However for such a dynamic to occur, the public or decision makers must be willing to transform feelings of revulsion toward the perpetrator of a criminal nuclear act into feelings of fear regarding one's own nuclear weapons (or those based on one's national territory). Although this transformation process may not be certain, it cannot be ruled out.

d. U.S. Governmental Action

In 1996 NATO responsibility-sharing is a topic which continues to gain momentum due to various economic and geopolitical factors.[35] Among the economic components:

> pressures to reduce the deficit; possible tax cuts (or at least a reluctance in Congress and the White House to raise taxes); and growth in entitlements (Social Security, Medicare, et al.) and interest payments on the deficit. These payments will be about $257 billion in FY96 (16 percent of the Federal budget), and almost equal to defense spending ($262 billion). Medicare and Medicaid will total $271 billion while Social Security will amount to $351 billion. Some project that spending on Medicare and Medicaid will grow at a 7 percent annual rate in real terms in 1995-2000, in part because of increased demand due to the continued growth of the elderly population.[36]

Several Congressmen have seized on these budgetary concerns as justification for legislation that would significantly alter the source of funding for the U.S. forces committed to NATO. For the past several years, legislation has been introduced and which threatens to remove a substantial portion of European-based U.S. forces should the NATO European Allies fail to meet various cost-sharing formulae. On 15 December, 1995, Congressman Barney Frank introduced HR 2788, legislation intended:

> To provide that if a member nation of the North Atlantic Treaty Organization or Japan does not agree, by the end of fiscal year 1997, to assume the *full non personnel costs* of United States military forces permanently stationed ashore in that country, all such United States forces assigned in that country shall be withdrawn not later than the end of fiscal year 1999.[37] [emphasis added]

This bill includes the simplest cost-sharing formulation seen in any of the pieces of legislation of its type; it contains no complicated formulae or time schedules. In the unlikely event that such

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[34] Garrity, p. 106.

[35] Although DoD prefers the term "responsibility sharing", on Capital Hill the term "burden-sharing" is used interchangeably to describe the concept of host countries assuming some of the costs of deploying U.S. forces overseas.

[36] OMB figures cited in David S. Yost. "The Future of U.S. Overseas Presence," Joint Forces Quarterly, Summer 1995, p. 74.

[37] The Congressional Record, House. Thomas electronic reference. "HR 2788 IH." December 15, 1995.

legislation is approved, one possible result could be the removal or further reduction of U.S. nuclear forces in Europe. The issue of burden-sharing and forward deployment is not a wholly partisan one. Both parties' official declarations indicate support for a strong U.S. presence in Europe and an interest in greater allied burden-sharing. The dividing line on this issue appears to fall on whether members of Congress believe the two issues should be linked in one piece of legislation. The Republicans and Democrats in favor of these measures all expressed optimism that this legislation could be as successful in Europe as it had been in Japan (i.e., that the result would not be massive troop withdrawals). Those opposed did not share in the optimism.

Within the executive branch there is considerably less enthusiasm for such legislation. The White House, the Defense Department, and the majority of the members of Congress agree that 100,000 troops in Europe is the right number to meet U.S. commitments there. With respect to the nuclear component of those forces, the executive branch stands behind "the current posture and deployment of non-strategic nuclear forces [in Europe]" as outlined in the 1994 NPR.[38] A reduction of U.S. troops in Europe to 25,000 (as envisioned in one of the pieces of legislation or zero as in another) could well require a major restructuring of the U.S. nuclear forces deployed in Europe. Current U.S. nuclear commitments may be difficult to sustain under such manning constraints.[39] Of the several legislative branch staff members questioned by the authors, none was aware of any potential association between reduced troop levels and changes to the U.S. nuclear force posture in Europe.[40] Such a nuclear withdrawal, it appears, would only occur as an unintended consequence of any burden-sharing legislation.

These U.S. discussions have not gone unnoticed on the European side of the Atlantic Ocean. The European Allies, after quietly observing these most-recent Congressional debates, have recognized again the need to carefully consider the nature of NATO's "transatlantic link" and the U.S. commitment to European defense.[41] However unlikely, action by either the executive or the legislative branch of the U.S. government could lead to a withdrawal of U.S. NSNFs from Europe, either by design or by default.

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[38] The United States of America. The White House. The National Security Strategy of the United States. February 1996.

[39] David S. Yost. Nuclear Weapons in Europe: Prospects and Priorities. Draft paper for Future Roles Series. (Livermore, California: Sandia National Laboratories, August 1996), p. 47.

[40] Interviews conducted with Staff members of the SASC and HNSC as well as defense staffers for individual Senators.

[41] These thoughts were expressed by French, British, and German officials during interviews conducted by the authors in 1996.

e. Safety and Reliability of Systems

With the U.S. decision to transform its 1992 moratorium into a permanent ban on nuclear explosive testing came the science-based Stockpile Stewardship and Management Program (SSMP). According to Department of Energy officials, the program will assure the reliability of current U.S. nuclear weapon systems for the foreseeable future. SSMP, he explained, relies on modeling and nondestructive testing to insure that even aging weapons will continue to function as designed.[42] Acknowledging the challenges inherent in SSMP, the Director of the Los Alamos National Laboratory recently commented, weapons designers have pointed out that the current aging weapons inventory is already deviating from design. Predicting the long-term reliability of the stockpile becomes increasingly difficult under these circumstances.[43] Another observer familiar with U.S. nuclear weapons design adds, "The B-61 is the single most tested, most reliable system. The US has more confidence in it than other systems, but with a problem in the future, particularly a safety issue, if the weapon is the only system available, then you're faced with structural disarmament."[44]

SSMP could work or it might be, as one critic has described, "a crafted plan for atrophy." Should the challenges of SSMP prove to be too great, the U.S. will be faced with a short list of options: remanufacture weapons and test them in order to certify them for use;[45] present the image of a power that has a usable arsenal when in reality this is not true; withdraw the (now non-functioning) weapons from Europe. None of these options could be considered particularly appealing to the members of NATO.

f. Summary of Delegitimizing Events

Policy makers cannot forecast every situation which might lead to nuclear surprises or shocks. Even the most thoroughly examined diplomatic schemes and the most flexible military plans could not be sufficient to prevent or overcome "a truly revolutionary event involving nuclear weapons."[46] Public opinion following such an occurrence would be

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[42] This statement amounts to a significant simplification, but transmits the general idea behind SSMP. form: DoE Assistant Secretary for Defense Programs. Presentation at the Naval Postgraduate School. Academic Year 1996.

[43] William B. Scott. "Aging Arsenal Poses Dilemma." *Aviation Week, Science and Technology*. 17 July, 1995, p. 26, and Director of Los Alamos Nuclear Laboratory, cited in Michael R. Boldrick. "The Nuclear Posture Review: Liabilities and Risks." Parameters. Vol. XXV, No. 4, Winter 1995-96, p. 88.

[44] Interview conducted by authors in March, 1996.

[45] As detailed in the SSMP discussion in Scenario 1, the magnitude of the challenges associated with this task should not be underestimated.

[46] Garrity, p. 110.

unpredictable and difficult to control. A domino effect that starts with a nuclear surprise, continues to mass protests and ends with loss of political support for U.S. NSNFs in Europe can not be completely discounted. Indeed, the more probable routes to unilateral withdrawal of U.S. NSNFs from Europe might be the most difficult to prevent: a catastrophic nuclear accident, an attempted security breach at a nuclear storage facility, some type of nuclear use, or a failure of SSMP to maintain U.S. nuclear weapons reliability in a non-testing environment.[47]

2. Alternative Assurances

According to the Alliance's *Strategic Concept*, "[the Allies]... will maintain adequate sub-strategic forces based in Europe which will provide an essential link with strategic nuclear forces, reinforcing the transatlantic link. These will consist solely of dual-capable aircraft which could, if necessary be supplemented by offshore systems."[48] Since the removal of the U.S. NSNFs would be clearly contrary to this declared strategy, it would be incumbent on the U.S. to reassure its NATO Allies of its still-honorable intentions in Europe. Two necessary assumptions regarding this withdrawal of NSNFs follow. First, should the U.S. make this move, it would *not* indicate a larger desire of the U.S. to decouple from its nuclear responsibilities in Europe. (However, convincing the NATO allies of this intention to honor responsibilities would be no easy task.) The second assumption, that the U.S. would maintain a substantial contingent of conventional forces in Europe, could help demonstrate U.S. resolve. Two broad plans for alternative assurances include reconstitution (i.e., arrangements for the reintroduction of U.S. NSNFs to Europe in future times of crisis) and substitution, which means designating strategic systems (e.g., ICBMs or SLBMs) or maritime systems (i.e., TLAM-Ns aboard attack submarines) to perform the role previously played by DCAs and gravity bombs. In addition to putting forward new ways of thinking about existing weapons systems in order to reassure Allies, the U.S. might also suggest new organizational arrangements for cooperation and consultation on nuclear issues in order to provide for continued robust Allied participation in all aspects of NATO's nuclear program.

a. Reconstitution

A declared policy of reconstitution might help to mitigate the perceived loss of deterrence associated with an NSNF withdrawal, and it could be the simplest fall-back position for the U.S. to adopt in that it would not require significant changes to NATO's organizational or

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[47] The first two items come from Patrick Garrity, op. cit., p. 106. The last is the opinion of the authors.
[48] NATO, The Alliance's New Strategic Concept, Press Communiqué S-1(91)85. Brussels: 7 November, 1991, par. 57.

physical structures. NATO could retain its consultation structure and its nuclear strike bases—without weapons. Allies could continue to train for nuclear delivery missions, and NATO's consultative bodies that deal with nuclear issues would still play their respective roles. The significant, but perhaps not insurmountable, difference is that each of these functions would occur with respect to a nuclear force that would (in accordance with a prior agreement with the NATO Allies) be transported back to Europe during emergencies in order to be employed in its planned role.[49]

Critics of reconstitution generally put forth three arguments. The first is that the act of reintroduction amounts to a major step in crisis escalation by clearly signaling the contemplated use of nuclear weapons. They see this step as provocative—since it might invite preemption by a future opponent—and therefore possibly self-deterring.[50] A second main criticism, as one U.S. observer notes, is that "it would be difficult to achieve Alliance consensus on such a move in the limited time available during a crisis. Also, there would be a need for preexisting agreements with Alliance partners to stream-line the process."[51] Essentially, reconstitution would necessitate three discussions within the Alliance decision making structure: one regarding the plans to make such a concept work; one regarding the reintroduction of the weapons into the theater during a crisis; and one—which would be necessary no matter what the location of the weapons—regarding the use of those weapons. A third criticism heard from American as well as European observers is that once U.S. NSNFs are removed from Europe, anti-nuclear advocates would vigorously, and perhaps successfully, oppose any attempts at reintroduction. As one Congressional staff member put it, "...once they are out, they are out forever."[52]

Reconstitution would require NATO to deal with new issues. Certainly, however, the logistical challenges associated with reconstitution are not insurmountable. The plan could be made more credible by periodic evaluations and exercises to ensure that all participants in the process remain fully capable of performing their functions. Problems relating to the achievement of political consensus, while troublesome, to some extent are likely to be a part of any NATO effort—not just reconstitution. Also, the leverage of anti-nuclear groups must not be overstated.

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[49] For a more elaborate discussion of the concept of reconstitution, see Karl Kaiser, "from nuclear deterrence to graduated conflict control," Survival, vol. 32 (November/December 1990), pp. 483-496.
[50] David S. Yost. Nuclear Weapons in Europe: Prospects and Priorities. Draft paper for Future Roles Series. (Livermore, California: Sandia National Laboratories, August 1996), p. 41.
[51] Interview in Washington, D.C., March, 1996.
[52] Interview in Washington, D.C., March, 1996.

Determined and authoritative European leaders have taken actions contrary to the very vocal beliefs of such groups, especially when vital national interests have been at stake.[53] Perhaps the largest challenge, convincing the NATO Allies that the U.S. nuclear guarantee remained firmly in place, is discussed later in this chapter.

b. Substitution

Another means of extending deterrence to NATO Europe following a unilateral withdrawal of the remaining U.S. nuclear weapons might be by substitution—the dedication of off-shore systems (as described above) to NATO missions. From an operational perspective, this approach might offer NATO planners an improved capability against heavily defended targets, equal (or greater) striking power, less risk to Allied forces, and less overall cost. Whereas a nuclear strike from an aircraft would probably require a substantial "support package," off-shore systems are capable of "going it alone."

In June 1996, David Omand of the British Ministry of Defense wrote of the British plan for using Trident in a sub-strategic role. He pointed out that this is possible only "because of [Trident's]flexibility in the choice of targets that can be held at risk; flexibility in warhead numbers on each missile; and flexibility in the choice of warhead yields."[54] Although the British and U.S. Trident SLBMs carry different warheads, in most other significant areas, the missiles are the same. Therefore, it is logical to assume that—although the British do not recommend such a course of action for the U.S.—the U.S. could adopt a similar approach.

Along with these apparent operational strengths comes the criticism that reliance on off-shore systems could lead to a particular operational short-fall. According to press reports in the Spring of 1996, the B-61 Mod 11 has an earth-penetration capability and should enter the U.S. inventory by the end of 1996.[55] While ICBMs and SLBMs can destroy hard targets (albeit with significant residual fallout), TLAM-N reportedly lacks the low CEPs of conventional TLAM

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[53] For example, Helmut Kohl's assertion, "Political leadership also means not following the mood of the moment in existential issues. If Konrad Adenauer had followed public opinion polls our country never would have become a member of the Atlantic Alliance....If I had followed public opinion polls in 1982/83, then the NATO dual track decision would never have been implemented....We had to do it....it was the right thing to do." cited in Ronald D. Asmus. German Strategy and Opinion After the Wall. (Santa Monica, California: RAND Corporation, 1994),
pp. 3-4.

[54] David Omand, "Nuclear Deterrence in a Changing World: The View from a UK Perspective," RUSI Journal, June 1996, pp. 19-20.

[55] Fusing problems may delay the deployment of this system. Cited in "Nuclear weapons only option for USA to hit buried targets." Jane's Defence Weekly, 1 May 1996, Vol. 25; No. 18; p. 13.

variants and is, therefore, probably unsuitable for hard target kills.[56] Off-shore forces, it seems, may not be an adequate substitute for NATO's soon to be available earth-penetrating NSNFs.

Operational concerns aside, it is in the realm of politics that a substitution posture is likely to be considered least desirable. Burden sharing and Allied involvement would probably be limited to discussions in NATO's consultative bodies. In fact, operational control of the ICBMs, SLBMs, and TLAM-Ns would probably continue to fall under the Commander-in-Chief of U.S. STRATCOM instead of CINCEUR. Another concern in the realm of politics relates to the difficulty of sending a clear political message with off-shore systems. Perplexingly, some of the same observers who would criticize the concept of reconstitution as being too threatening and provocative during times of heightened tension contend that it is almost impossible to make *enough* of a threatening show of Allied resolve (perhaps to a regional adversary threatening WMD use) with systems that are located under the sea or thousands of miles away.[57] The apparent paradox may reside in the political circumstances and distinct audiences involved. It would probably be difficult to return U.S. nuclear weapons to Europe if allied publics and elites argued that such a step would be excessively dangerous and "provocative" in Russian eyes.

A final concern expressed by those who believe in the concept of limited engagements is the doubt that a country targeted by an off-shore system would be certain that it had just been visited by a limited or non-strategic weapon instead of a strategic one. It is worth asking whether any actor that had just been hit by a nuclear strike would be particularly interested in such esoteric distinctions.

c. Beyond the Weapons

Current NATO policy is to emphasize the political versus the war-fighting roles of NSNFs. However, this emphasis should not be mistaken for a marginalization of the importance of the physical presence of U.S. NSNFs on European soil. Even if the U.S. offers sincere assurances and provides technically credible reconstitution or substitution options, neither NATO-Europeans nor potential adversaries may be fully convinced of the continued political resolve of the United States. Three options beyond these force posture changes might help bridge

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[56] For general information on B-61(not the MOD-11, however) and TLAM-N see: Duncan Lennox, ed. Jane's Strategic Weapon Systems. (United Kingdom: Jane's Information Group Ltd., 1996), issue 20.

[57] This thought was expressed by several civilian and military members of DoD when asked to comment on the idea of substitution. However, the challenge of "nuclear missile rattling" in today's information age seems less daunting when one considers the current "revolution" in information technologies. If the U.S. government wanted to send a signal that its nuclear-armed submarines were prepared to respond to some sort of threat, it seems certain that the government could find a way.

a perceived credibility gap faced by the U.S. following a unilateral withdrawal of NSNFs from Europe:

- increased emphasis on the importance of and the cohesion inherent in NATO's nuclear decision-making process;
- increased Allied participation in U.S. nuclear decision making staffs (e.g., NATO representation at STRATCOM, the Joint Staff, and the OSD offices that deal with nuclear issues; and
- Allied manning of offshore nuclear weapons systems.

In 1995 Karl-Heinz Kamp commented that Germany had developed a habit of responding to U.S. withdrawals of nuclear systems from Europe—those previously touted as essential to the credibility of the U.S. extended deterrence claims—with a redefinition of what posture the Germans considered to be credible. This redefinition invariably equated to the newly down-sized U.S. posture.[58] There is some merit in the application of this approach not only to Germany, but to other NATO allies as well. One means of investing a reduced U.S. presence with added credibility—beyond expecting the U.S. Allies to simply have faith or change their definition of credibility—would be by strengthening NATO's nuclear consultative process. In a recent discussion, a USAF officer who follows nuclear issues remarked, "If somehow the level of NSNFs based in Europe goes to zero, we may have to publicly, or at least unambiguously emphasize the decision versus the act of nuclear use as adequate burden-sharing."[59] Indeed, today the inner workings of NATO nuclear consultation mechanisms are mostly classified, and in fact, public statements from non-nuclear Allies regarding their specific contributions in Alliance nuclear affairs are practically non-existent. By making clear the degree of input made by all Alliance members in all aspects of Alliance policy, perhaps all parties concerned might see a NATO nuclear policy dependent on reconstitution or substitution and U.S. promises as more credible.

Another scheme which might enhance the political credibility of offshore forces is the idea of placing officials from NATO Allies on U.S. nuclear staffs in addition to the current NATO staffs. One analyst recently made such a proposal to NATO's Nuclear Planning Group. Pointing to what he sees as a gradual erosion of U.S. consultation arrangements, he suggested that one way to ensure a European influence on U.S. nuclear policy could be "a European voice at STRATCOM where the relevant nuclear planning for contingencies which might affect the

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[58] Karl-Heinz Kamp. "Germany and the Future of Nuclear Weapons in Europe." Security Dialogue, September 1995: p. 289.

[59] This point came out during an interview by the authors in Washington, D.C., at the Pentagon in March, 1996.

Europeans is taking place."[60] While the response to this proposal at STRATCOM is unclear, such an initiative could help to maintain European confidence in the reliability of U.S. commitments.

A final scheme for reassurance might involve making provisions for military personnel from non-nuclear NATO countries to jointly man U.S. weapons delivery systems dedicated to NATO. Although marginally reminiscent of the Multi-Lateral Force (MLF),[61] this concept would be somewhat different. Through joint manning of weapons delivery systems, it would allow interested Allies the opportunity to participate in a more tangible way in the nuclear defense of Europe. However, in order to comply with the NPT, it would be necessary to retain U.S. command, control, and ownership of these systems and the nuclear weapons they would carry. Such a proposal is likely to meet significant resistance from U.S. government and military officials on the grounds that it might infringe on U.S. sovereignty and the need for nuclear secrecy. However, when weighed against alternatives such as greater nationalization of European nuclear policies, a loss of U.S. influence within the Alliance, or a perception by adversaries as well as Allies that the U.S. no longer provides a credible deterrent, this proposal could appear more attractive.[62] Such a move would offer the U.S. an opportunity to provide the Allies something more than assurances, and at the same time provide a continued opportunity for Allies to more fully share the operational responsibilities for NATO's nuclear mission.

A final note should be made regarding any new nuclear weapons posture or any scheme designed to change the Alliance's consultative mechanisms. Any such change is likely to require a revision to the Alliance's Strategic Concept. By definition, the current document embraces the present state of nuclear affairs within the Alliance. It indicates the absolute importance of U.S. NSNFs deployed on European soil and the necessary risk- and responsibility-sharing this arrangement allows NATO's non-nuclear Allies.[63] The process of revising one of the

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[60] The previous observation and the quotation come from Karl-Heinz Kamp. European Nuclear Cooperation: Prospects and Problems. Presentation at the NATO's NPG Symposium 1996. NATO Nuclear Planning Group, 3 March, 1996, p. 11.

[61] for an interesting discussion of the MLF, see Lawrence S,. Kaplan, NATO and the United States: the Enduring Alliance, New York: Twayne Publishers, 1994, pp. 91-96.

[62] Although numerous sources outline the possible effects of a U.S. withdrawal from the European nuclear scene, a particularly comprehensive treatment is given by Thomas Enders, Holger H. Mey, and Michael Ruhle. "The New Germany and Nuclear Weapons." Nuclear Weapons in the Changing World: Perspectives from Europe, Asia, and North America, Ed. Patrick J. Garrity and Steven A Maaranen. New York: Plenum Press, 1992.

[63] The Alliance's New Strategic Concept, op. cit., paragraphs 55, 56, & 57.

bedrock documents of NATO probably could not occur in a public relations vacuum.[64] Also, this undertaking would serve to showcase the often challenging task of strategy formulation in a democratic, parliamentary environment. It seems likely that an already aroused public[65] would take a substantial interest in the formulation of any new nuclear strategy.

D. FORCE CHARACTERISTICS AFTER A UNILATERAL WITHDRAWAL

The number of U.S. weapons physically stationed in Europe when no crisis exists would be zero. For reconstitution, a force of undetermined size would be rapidly re-deployed to Europe at the behest of the NAC. The scheme for substitution makes no allowance for any NSNFs in Europe. In all cases, nuclear consultation would continue to occur. Although some might question whether such consultations possessed any real substance, NATO and the U.S. could take steps to invest greater perceived significance to this process. Alliance-wide capability would rely primarily on perceptions of the degree to which NATO's nuclear policies represent a collective policy or simply a U.S. policy under a NATO rubric. In the event that NATO adopted either of the reassurance postures indicated above without the schemes to enhance credibility detailed later, it seems likely that NATO's nuclear strategy would serve to singularize the role of the U.S. to the increasing exclusion of other, nominal participants. U.S. linkage to the Alliance via Article V of the North Atlantic Treaty would not be affected by a unilateral withdrawal or either of the reassurance postures. Nothing in the North Atlantic Treaty requires the presence of NSNFs in Europe. With regard to weapons basing, no European country would maintain a U.S. nuclear presence on its soil during non-crisis periods. Under the plan for reconstitution, all countries that currently accept NSNFs could resume the practice. Under a plan for substitution, no such provision would exist. Under reconstitution, force readiness would necessarily decline. It is assumed that under a substitution scheme, nuclear forces would be immediately available for employment. With regard to military flexibility, a reconstituted force would retain the same characteristics of the current posture, after surmounting the hurdle of redeployment to Europe while a substitution scheme could be more limiting. Table 5.1 summarizes these characteristics.

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[64] One need only reference the numerous accounts and analyses spawned by the Alliance's last major policy revision in 1990-1991 to get a feeling for the amount of attention likely to be given a future such undertaking.

[65] It was this public, after all, that (according to the theory earlier presented) had influenced the decision to remove the weapons in the first place.

Nuclear Force Characteristics: Scenario #2 Unilateral Withdrawal	# of US Weapons in Europe	Zero*
	NATO Nuclear Consultation	YES
	NATO-Wide Capability	No
	US Article 5 Strategic Linkage	YES
	# of US Weapons Basing Countries	Decreasing to Zero
	Level of Military Readiness	Less
	Level of Military Flexibility	Less

*Except when nuclear weapons may be re-introduced during a time of crsis through reconstitution measures

Table 5.1 Force Characteristics

E. ANALYSIS AND CONCLUSION: A UNILATERAL WITHDRAWAL AND EURASIAN STABILITY

1. Deterrence and Politics

If more countries took part in the decision to use a nuclear weapon and more countries participated in the actual nuclear strike, the entire nuclear event might be considered more legitimate. To the extent that this proposition is acceptable, the concept of nuclear legitimacy should make sense.

The reconstitution approach would be no less legitimate than the Alliance's current approach. The same states that accept nuclear risks and responsibilities in the present arrangement would be offered the same role under this new arrangement. The substitution approach, on the other hand, represents a serious challenge to the legitimacy of NATO nuclear use. Even if NATO adapted its consultation mechanisms to allow for more distinct contributions from non-nuclear Allies in nuclear decisions, there is still the problem of singularity[66] in the role of the U.S. as NATO's preponderant nuclear power. Many U.S. observers interviewed pointed out that a clear NATO consensus born of unambiguous Allied participation would enhance the legitimacy of any contemplated nuclear use. In short, should the U.S. remove its weapons from Europe and adopt a

[66] David Yost points out that this singularity would be apparent, "in that allied governments (except for Britain and France) would no longer accept concrete nuclear obligations and the United States would be, more than ever, the principal target of antinuclear movements in Western societies." Yost, "Nuclear Weapons in Europe: Prospects and Priorities," op. cit., p. 50.

policy of substitution, legitimacy is likely to suffer despite NATO's best efforts to mitigate this decline.

Alliance cohesion is another area that could suffer. According to one U.S. analyst,

> "Withdrawing all the remaining U.S. nuclear forces from Europe would constitute a break without precedent in the history of NATO, and reawaken long-standing European anxieties about the disengagement of U.S. nuclear commitments. It could have far-reaching political effects, because European political establishments have been accustomed since 1948 to see a U.S. nuclear presence in Europe as a proof of a U.S. commitment."[67]

To the extent that non-nuclear Allies lose confidence in the replacement nuclear defense arrangements, Alliance cohesion would probably suffer. If allies became less confident in U.S. guarantees, they would be more likely to consider alternative arrangements and become more conscious of differences in status between their nuclear and non-nuclear partners. However, should a future NATO successfully navigate the waters of a U.S. withdrawal of the remaining nuclear weapons, embrace a new nuclear posture (such as substitution or reconstitution), strengthen its consultative mechanisms, and rewrite its strategy to account for these changes, it might be every bit as cohesive as the current Alliance. In short, extraordinary care will be required for Alliance cohesion to weather the storm of a U.S. unilateral withdrawal without suffering some damage.

2. Strategic Concerns

During the Cold War, the threat of a massive Soviet invasion was very real, and in a major sense, provided NATO with its *raison d'être*. Since the end of the Cold War, however, this threat has substantially subsided. Nevertheless, Russia today retains a considerable nuclear arsenal. This Russian threat must still figure heavily in NATO's military planning. Regardless of Russia's intentions, NATO's nuclear posture continues to reflect a recognition of Russian capability as well as potential. If one accepts that NATO's forces played a role in preventing Soviet aggression or coercion in the NATO area during the Cold War, then one should also accept that the current force posture would at least represent a planning factor for a post-Soviet Russian regime contemplating action against NATO Europe.

The question that must be answered is whether a Russian regime would see a NATO minus U.S. NSNFs on European soil as somehow less strong or whether the same regime would consider U.S. security guarantees as less credible. This perceived credibility will rest as much on

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[67] Ibid., p. 50.

the Alliance's evident willingness to use nuclear weapons as the particular location of those weapons. If a Russian regime perceived a NATO nuclear posture based on reconstitution or substitution combined with any NATO reassurance scheme, to be less credible, the perceived ability (or propensity) of Russia to threaten the NATO Alliance would increase.

Regarding "new" WMD threats on NATO's periphery, the Alliance's official position has been that its nuclear force, combined with its substantial conventional force, should make the consequences of any such threat incalculable.[68] NATO clearly sees a role for its nuclear forces in deterring proliferant WMD threats.

However, in order to understand whether proliferant states might threaten the Alliance following the adoption of the nuclear schemes outlined above, it is necessary to consider the calculations that might be made by such a state. As indicated in the proliferation chapter of this work, some NATO officials believe that "A rogue government may perceive WMD as political weapons that can be used for coercion. It could also perceive them as military weapons whose use, even on a limited scale, might help to compensate for NATO's superiority in conventional forces and technology."[69] Since even the most ambitious nuclear acquisition program in a proliferant country would be absolutely incapable of approaching nuclear parity with any of the NATO nuclear countries individually, let alone collectively, as members of the Alliance, it seems unlikely that any decision to threaten NATO with WMD would be based on any perceived advantage in numbers of weapons. Other factors, it seems, may influence the apparently irrational decision by a proliferant state to threaten a nuclear-armed NATO.

3. WMD Proliferation

The idea of seeking alternative arrangements was mentioned above. Among such alternatives, most experts note, is the possibility for non-nuclear Alliance members to acquire their own nuclear weapons. Those sympathetic to this point of view point out that U.S. NSNFs have helped contain the concerns of non-nuclear Allies regarding their own vital security interests—interests that if threatened might lead these Allies to consider a national nuclear option.[70] A group

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[68] Such statements appear in many forms in various NATO documents see for example: NATO. Basic Factsheet Number 8. NATO's Response to Proliferation of Weapons of Mass Destruction. NATO Homepage.

[69] Schulte, 1995, op. cit., p. 18.

[70] This theme runs through numerous interviews conducted by the author with government and non-government Americans, Russians, and Europeans. Two articles which offer a provocative treatment of the notion of internal proliferation are: Thomas Enders, Holger H. Mey, and Michael Ruhle. "The New Germany and Nuclear Weapons." op. cit. and Duygu Bazoglu Sezer, "View from Turkey: Turkey's New

of German analysts eloquently characterizes the main issues here. They note that the acquisition of nuclear weapons by a non-nuclear NATO state

> would , in principle, solve all security problems, deficits and dilemmas inherent in the concept of extended deterrence. On the other hand, this option will be associated with a number of serious political problems including Russian, Eastern European, and Western reactions, which might lead to [the country's] self-isolation.[71]

Two countries that are typically mentioned regarding internal proliferation are Germany and Turkey. A Germany that felt unprotected could be concerned that its nuclear-armed EU partners or Russia might attempt to use their special status to gain advantage against the large, but relatively weak (in the nuclear realm) Germany. Turkey, it is argued, has numerous geopolitical security concerns that might make it believe such a move was warranted. Although in each case, the potential consequences might be severe in terms of international censure, internal proliferation cannot be ruled out. Also, should one or two Alliance members choose to purse the nuclear option, a destabilizing "domino effect" resulting in numerous EU/WEU nuclear-armed states could well be the result. The prospects for internal proliferation, it seems, could increase following a unilateral withdrawal of U.S. NSNFs from Europe.

According to Gregory Schulte, NATO's Director for Nuclear Planning, "countries are generally motivated to acquire WMD by their assessment of their own regional security situation."[72] This statement then, raises the question, "To what extent *can* the possession of nuclear weapons by NATO prevent the acquisition of nuclear weapons by states *outside the Alliance*?"[73] Based on NATO's official declarations, the answer appears to be, "Very little."[74] Other observers comment that by promoting regional stability, NATO's NSNFs may lessen the likelihood of proliferation on the periphery. This logic implies that to the extent that a nuclear posture based on either reconstitution or substitution is less credible, Europe would be less stable, and the likelihood of the occurrence of external proliferation would rise. While there is a certain

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Security Environment, Nuclear Weapons, and Proliferation," Comparative Strategy, Vol. 14 (April-June 1995).

[71] Enders, Mey, et al., op. cit., p. 138.

[72] Gregory L. Schulte, "Responding to Proliferation- NATO's role." NATO Review. July 1995, p. 18.

[73] The Director of Central Intelligence, John M. Deutch, includes Iran, Iraq, and Libya in his list of "rogue nations" seeking to acquire WMD. U.S. Central Intelligence Agency, "Worldwide Threat Assessment Brief to the Senate Select Committee on Intelligence by the Director of Central Intelligence, John M. Deutch." Public Affairs Staff, DCI Speech 2/22/96, CIA Homepage.

[74] See the chapter in this work entitled "Proliferation" for a more thorough discussion. A characteristic NATO declaration regarding proliferation indicates it is NATO policy to "prevent proliferation from occurring or reverse it through diplomatic means." see NATO. DPC/NPG. Press Communiqué M-DPC/NPG-2(95)117. Brussels 29 November 1995.

parsimony to such a theory, it relies mostly on conjecture and judgment. NATO, by its official statements, does not indicate a particularly strong belief that its force posture can prevent proliferation. Instead, NATO consistently points to diplomatic instruments such as the NPT as "the cornerstone of NATO's non-proliferation effort.[75] Therefore, it is perhaps more reasonable simply to note that even a major change in NATO's nuclear posture might have little measurable effect on proliferation—that is, the WMD acquisition decisions—by countries outside the Alliance. Table 5.2 summarizes this analysis.

Summary of Analysis: Scenario #2 Unilateral Withdrawal	DETERRENCE & POLITICS		STRATEGIC CONCERNS		WMD PROLIFERATION	
	Nuclear Legitimacy	Alliance Cohesion	Russian WMD Threats	"New" WMD Threats	External Proliferation	Internal Proliferation
	↓	↓	↑	—	—	↑

Table 5.2 Summary of Analysis

F. KEY FINDINGS

- **Public reactions following an accident or conflict involving nuclear weapons would be unpredictable and possibly difficult to control. A domino effect starting with a nuclear surprise could lead to mass protests and end with a loss of political support for the retention of U.S. NSNFs in Europe.**

- **Alternatives such as reconstitution or substitution might help to mitigate the damage to NATO's deterrence capabilities that would occur following a unilateral withdrawal of U.S. NSNFs.**

- **Reassurance schemes might enhance the credibility of the alternative postures above. These schemes could include: increased emphasis on the importance of NATO's nuclear decision-making process, increased Allied participation in U.S. nuclear decision making staffs (e.g., NATO**

[75] Numerous NATO documents tout the NPT and other diplomatic efforts as the core of NATO's non-proliferation efforts, for a recent example, see: NATO. Final Communiqué: The Defense Planning Committee and the Nuclear Planning Group of NATO." Press Communiqué M-DPC/NPG-1(95)57. Brussels: 8 June 1995, par. 25.

European representation at STRATCOM, the Joint Staff, or the OSD offices that deal with nuclear issues), or Allied participation in the manning of offshore U.S. nuclear delivery systems.

- **Thinking about how NATO might deal with the consequences of a unilateral withdrawal is a more sensible approach than simply hoping a unilateral withdrawal will not occur.**

VI. SCENARIO #3:
A WEST EUROPEAN NUCLEAR IDENTITY (WNI)

So far, Germany's involvement in "Europe" looks rather like the action of the jovial uncle at a children's party who, to show goodwill, allows his hands to be tied behind his back. It is not a posture that he will want to stay in for long, and his mood may change when he becomes aware of innumerable little fingers rifling through his pockets.

Noel Malcolm[1]

A. INTRODUCTION

The concept of a nuclear-armed European defense force is often discussed in European and North American official as well as academic circles. Most of these discussions focus on the manifold obstacles to (and prognosis for) the realization of such an organization. The scene for this dialogue typically is the current European security environment, and even the most optimistic analyses tend to describe a long, *evolutionary* process—perhaps spanning a generation—that *might* eventually culminate in the realization of some form of a European nuclear force. In the United States, the only group that proceeds much beyond forecasts about the possibility of achieving such an entity, it seems, is a small group of scholars.[2] In Europe, the number of analysts commenting on the subject is larger, with the majority in France, Germany, and Britain.

B. ASSUMPTIONS

This chapter will assume a slightly different point of departure—namely a Europe of the future which has just experienced a delegitimizing scenario of the type described in the previous chapter. Whereas Scenario #2 assumed that in the aftermath of an event which required a U.S. withdrawal of NSNFs from Europe, the U.S. would make every attempt to reassure its Allies of its still-solid nuclear promises, Scenario #3 advances to the next phase and assumes (for the sake of

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[1] Noel Malcolm. "The Case Against Europe," Foreign Affairs, March/April 1995, p. 66.

[2] U.S. policy makers interviewed by the authors in 1996 shared the view that the likelihood of the Europeans creating an independent nuclear force in the current security environment was quite small. Beyond this none of those interviewed saw much utility in further analysis of the topic. See, among other examples, the works of David Yost, Karl-Heinz Kamp, Josef Joffe and Holger Mey for analyses of the prospects for European nuclear deterrence.

analysis) that such attempts at reassurance will have been deemed wholly unconvincing by the West European members of the Atlantic Alliance. The result will be a NATO whose European members are no longer certain that their security is backed by the ultimate nuclear guarantees the U.S. had once proffered. Although some may consider this an instance of creative scenario-building, it serves as the intellectual basis for a discussion surrounding what might happen if Western Europe had to deal with a more immediate versus an evolutionary approach to the development of a West European Nuclear Identity (WNI).

This chapter first explores various assumptions and limitations which would be features of a European security landscape devoid of U.S. nuclear weapons or guarantees. First, it identifies what motives might lead Western European states to conclude that the rapid development of a West European Nuclear Identity would be desirable—or imperative. Next, it discusses the resources which might be available to this European force. Succeeding segments investigate the political aspects of the issue—which countries could be expected to participate, which political fora might be used for consultations, and what sort of a risk- and burden-sharing arrangement might be adopted. The final sections identify characteristics of such a force and analyze a WNI based on political, proliferation, and threat factors.

C. DEVELOPING THE SCENARIO: THE ROAD TO A WNI

1. Motives

Many U.S. and European officials privately admit their concerns that a Europe minus credible U.S. nuclear guarantees would be one in which Germany might seek to acquire nuclear weapons in order to meet its security needs.[3] One German observer pointed to public manifestations of these concerns such as "the U.S. decision not to export even small amounts of weapons-grade nuclear material for a German research reactor, or the skepticism on the French and British side when Germany joined the Western efforts to provide technical assistance for dismantling nuclear weapons in the CIS."[4] A rare example of an official expression of this view occurred in a May 1994 review of future European security issues in which "the WEU Assembly's Defense Committee concluded what no German or other European leader would admit in public: that Germany might opt for nuclear weapons if its security were to deteriorate significantly. 'It is a

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[3] Official statements to this effect are rare; however, numerous experts offered this observation when interviewed by the authors between March and October 1996.

[4] Karl-Heinz Kamp. "Germany and the Future of Nuclear Weapons in Europe," Security Dialogue, September 1995: p, 290, note 6.

major concern of France's foreign policy to insure that a reunified Germany is solidly anchored in a European Union with a European defense identity as a rational component,' the paper said... 'In this framework, Germany must be provided with a credible nuclear deterrent; on the one hand, to protect it from any possible Russian nuclear coercion; and on the other hand, to avoid it being compelled to develop its own deterrent.'"[5]

Two assumptions underlie statements of this sort: first, that a Germany which feels threatened (in this case by a nuclear Russia) must not *also* be allowed to feel alone; second, that a nuclear-armed Germany would pose a threat to the long-term peace and stability of the Eurasian area.

Regardless of such official WEU comments or informal conversations in decision-making circles, official German assertions have consistently and emphatically maintained that the FRG has no interest whatsoever in acquiring nuclear weapons. Whether queried publicly or privately, the official German government stance is that, "according to international treaties Germany has renounced the acquisition, the possession and the control of/over nuclear weapons." This position refers to the fact that West Germany signed the NPT in 1968; a united FRG endorsed the permanent extension of NPT in May 1995; and that along the way when a united Germany agreed to Article 3, Section 1 of the "Two-Plus-Four-Treaty" it again renounced the manufacturing, possession, or control of NBC weapons.[6]

While the official position of the Federal Republic is clear, other credible voices in Germany cast doubt on the FRG's willingness to completely rule out nuclear acquisition. For example, according to Holger Mey and Andrew Denison, "the existence of broad-ranging risks requires that Germany continue to secure nuclear protection and the ability to participate in joint nuclear planning;...[and] if the Alliance fails to adequately address nuclear issues, Germany will be the first to feel the consequences,"[7]—consequences, it seems, that would also be felt by the rest of Europe. As Mey and Denison also point out, "[i]t must be kept in mind...that Germany's

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[5] Document 1420, Assembly of the Western European Union, Fortieth Ordinary Session, May 19, 1994, "The Role and Future of Nuclear Weapons," p. 29. See also, Mark Hibbs, "Tomorrow a Eurobomb? Possibility of a European nuclear defense," Bulletin of the Atomic Scientists. January 1996, Vol. 52, No. 1, pp. 16+, LEXIS-NEXIS.

[6] Cited in Federal Republic of Germany, Ministry of Defense, "The military-strategic concept of the Alliance taking into consideration questions of nuclear strategy." Text provided by Colonel Padberg, GEAF. Air Attaché, FRG Embassy, Washington, D.C., March 1996.

[7] Holger H. Mey and Andrew B. Denison, "View from Germany: France's Nuclear Tests and Germany's Nuclear Interests," Comparative Strategy, Vol. 15, No. 2, 1996, p. 171.

renunciation of the nuclear option, whether in the Nuclear Non-Proliferation Treaty or the '2+4' treaty, was based on the assumption that the NATO and the nuclear guarantee remain intact."[8]

A recent survey of German military and civilian officials helps substantiate these ideas.[9] Those surveyed responded that, in the current environment *with* credible U.S. nuclear guarantees, their level of security-related motivations—fears of Russia, ethno-nationalist conflicts in Central Europe, and WMD proliferation—for acquiring nuclear weapons would be "low-to-none". *Without* those U.S. assurances, however, the respondents expressed increasing security motivations to pursue a national nuclear program depending on the type of replacement deterrent-arrangement devised. Should the proposal involve a "Europeanized nuclear force, motivations were likely to increase to the "low-to medium" level. If the plan involved a bilateral agreement (with France or the United Kingdom), motivation was reported to increase to a "medium" level. Finally, absent any strategy for nuclear protection, those leaders surveyed leaders suggested a *high* degree of security motivation to acquire nuclear weapons.

Fears of Germany and Germany's fears are not the only motivations which could lead to calls for a credible West European Nuclear Identity. Indeed it is not clear that these concerns would be sufficient to motivate the three major European powers to move beyond traditional rivalries and work together in pursuit of a WNI. NATO has been able to overcome such obstacles by relying on the clear leadership of the United States—"the first among equals." Absent such a unifying force, it is unclear whether the potential need for a European deterrent force—perhaps strengthened by newly perceived vulnerability to nuclear coercion—would suffice.[10]

It is worth noting, however, that when countries other than Germany, France, and the United Kingdom are mentioned in current discussions of a multinational European nuclear force, it is only as potential beneficiaries of such an entity's deterrence guarantees. Whether a country

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[8] Ibid., p. 170. If Germans are not willing to admit that they might not be able to trust themselves with nuclear weapons, they are willing to acknowledge that the prospect is rather chilling to many of their European neighbors—based on Germany's past. Therefore, they point out that the burden is on its nuclear-armed Allies, particularly the U.S. to take action to prevent any future such outcome. Also, as with all other countries that signed NPT, Germany has the right under Article X to withdraw from NPT if it decides that "extraordinary events...have jeopardized [its] supreme interests."

[9] Major Mark N. Gose, USAF, "The New Germany and Nuclear Weapons: Options for the Future," Airpower Journal, Volume X, SE (Special Edition, 1996), pp. 70-74. The results reported on this paragraph reflect the findings related to *security related* motivations only. Major Gose also reports noteworthy findings relating to "non-security" motivations for acquisition.

[10] For an excellent exposition on what some observers see as the unifying role of the United States within the Atlantic Alliance, see Josef Joffe, "Europe's American Pacifier," Foreign Policy, no. 54, Spring 1984, pp. 64-82.

would receive these European nuclear guarantees is expressed more as function of the country's membership in various organizations (e.g., WEU, EU, or NATO) which might provide a forum for this European nuclear force. The literature on the subject rarely addresses the specific security nor non-security rationales for nuclear coverage that these countries might consider.

Nevertheless, each non-nuclear NATO country which believes its own security is enhanced by the presence of the U.S. umbrella is likely to express interest in some alternative form of nuclear protection should the U.S. deterrent lose credibility. To a greater or lesser degree, each of these countries may perceive significant threats to its security—either from Russian capabilities or those weapons possessed by WMD proliferants. While a survey of each country's concerns in this area is beyond the scope of this chapter, the concerns of Turkey—perhaps the most pressing and least acknowledged—should be briefly mentioned.

According to the Chairman of the Joint Chiefs of Staff, General John M. Shalikashvili, Turkey resides in a geostrategically "rough neighborhood."[11] Its neighbors to the east and south—Syria, Iraq, and Iran—have each been recently implicated as potential WMD proliferants. Turkey's relations with newly independent states in the southern Caucasus have been characterized by disputes which may challenge Russian interests in the region. Turkey and Russia are also involved in a long-standing debate relating to Turkish regulation of shipping traffic in the Turkish Straits.[12] Each of these issues has potential WMD—and hence, nuclear deterrence—overtones. Additionally, according to Duygu Bazoglu Sezer, Turkish expert on nuclear and security issues, Turkey's commitment to a non-nuclear weapons status can only remain strong as long as the extended deterrence commitment of the United States remains "convincing and credible to Turks as well as to *de facto* and *de jure* nuclear weapons states and potential proliferators."[13] Sezer implies that if Turkey cannot rely on the U.S., it may have to consider the development of its own nuclear deterrent.

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[11] General John M. Shalikashvili, Letter to the Chairman of the Appropriations Committee of the House of Representatives of the U.S. Congress during the deliberations on the FY 1996 Foreign Aid Appropriations Bill, June 1996, paragraph 5. Cited on Turkey's Ministry of Foreign Affairs Homepage, 1996.

[12] These issues are summarized in two Turkish MFA papers: "The Goals and Principles of Turkish Foreign Policy" and "Back Ground Notes on the Regulations for the Turkish Straits," Turkey MFA Homepage, op. cit. For another discussion of the Straits issue, see Ercan Ersoy, "Turks Warn of Regional Row on Straits Oil Passage," The Reuters European Business Report, November 2, 1995, BC Cycle.

[13] Duygu Bazoglu Sezer, "Turkey' New Security Environment, Nuclear Weapons and Proliferation," Comparative Strategy, vol. 14 (April-June 1995), p. 168.

Notably absent from Sezer's analysis is any mention of Turkish participation in a prospective European nuclear force. This omission is perhaps related to Turkey's non-membership in the EU and associate membership in the WEU—two organizations often suggested as potential fora for a such a force. Although Turkey aspires to full participation in both Unions, its perception is that other European countries may not be willing to satisfy these aspirations.[14] This "creeping alienation"[15] might serve to exclude Turkey from future nuclear cooperation and could therefore conceivably inspire an unprotected Turkey to consider nuclear self-reliance.

2. Resources

The sudden departure of credible U.S. nuclear guarantees from the European security scene would necessitate an evaluation of those nuclear forces that could theoretically be at the disposal of Europe. In the near term, the nuclear forces of two countries—Britain and France—would be the only ones available. In the longer term, if those countries involved in a WNI chose to develop additional nuclear forces, they would have to contend with limits on nuclear testing for the following three reasons:

- The CTBT, if ratified, will establish a legal basis against testing.
- Should the CTBT not be ratified, substantial international pressure may nevertheless make nuclear testing politically problematic.
- Regardless of the status of the CTBT, France is in the process of closing down its test site and Britain relies on the U.S. for a site.

This analysis assumes that the forces available to a WNI would be limited to those currently in the inventories of the two nuclear-armed European countries and those systems currently in a non-operational status that might be brought back into service without testing.[16]

According to the Stockholm International Peace Research Institute, as of January 1995 these forces would include:[17]

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[14] Government of Turkey MFA, "European Security and Defense Identity and Turkey," MFA Homepage, 1996, paragraph 5.2.

[15] Ibid.

[16] The longer these retired systems are out of service, the less plausible it is that they may be brought back into service.

[17] SIPRI Yearbook 1995, Stockholm International Peace Research Institute, (Oxford, England: Oxford University Press, 1995), pp. 331-332. SIPRI used the following sources to build its database: the Office of the Secretary of Defense, "Annual Report to the President and the Congress"; DoD Press releases; USAF Public Affairs; the Arms Control Association; the Bulletin of Atomic Scientists; the Natural Resources Defense Council; and, INSS, "The Military Balance." President Chirac recently announced planned changes to the French nuclear force structure. These include scrapping all land-based missiles, retiring the Mirage

From Britain-

- approximately 100 gravity bombs for its *Tornado* DCAs
- approximately 100 A3-TK SLBM reentry vehicles for its *Polaris* SSBNs
- approximately 96 D-5 SLBM reentry vehicles for its *Trident* SSBNs

From France-

- approximately 60 ASMP missiles for land-based *Mirage IVP & 2000N* DCAs
- approximately 20 ASMP missiles for carrier-based *Super Etendard* DCAs
- approximately 18 S3D MRBMs
- approximately 30 *Hadès* short range missiles [currently in a reduced readiness status]
- approximately 384 M-4A/B SLBM reentry vehicles for *Redoutable*-class SSBNs—being replaced by *Triomphant*-class SSBNs.

If all of these forces were made available before the planned retirement and destruction of certain systems (which should be mostly complete by 1998), this would allow for a European nuclear deterrent backed by a total of over 800 warheads. Of that number nearly 200 are air-delivered weapons.[18] However, after 1998, Britain's gravity bombs and Polaris missiles will probably be withdrawn and destroyed.[19] Therefore, after 1998, the numbers of warheads available will be reduced to approximately 600 warheads and under 100 (French) air-delivered weapons. These air-delivered systems could conceivably be deployed to WNI partner countries into existing NATO strike bases. This concept is discussed later in this chapter.

A second important aspect of resource availability for a WNI is money. Since conceptually, the membership of a WNI could be as small as three countries—France, Britain and Germany[20]—or as large as the entire EU, an estimate of the fiscal resources that might be made available is best expressed in a range of figures. The GNP of the EU in 1992 was nearly 6.7

IVP, and upgrading France's SLBMs to the M45. For a thorough discussion see: Ben MacIntyre and Adam Sage. "Chirac pledges to scrap land-based nuclear missiles." The Times of London (Internet Edition). Europe Section. 23 February, 1996 pp. 1-2. & Craig R Whitney. "Chirac Announces Major Changes in French Military." The New York Times (Internet Edition). 23 February, 1996, p.2.

[18] Approximately 100 gravity bombs, an indeterminate number of substrategic Trident missiles, 65+ ASMP, and 30 Hadès SNFs.

[19] Michael Evans. "RAF to lose nuclear role after 42 years on the front line." The Times: 5 April 1995: Home News section see also chapter two of this project.

[20] Germany's participation is assumed, for various reasons explained later in this Chapter.

trillion dollars. For the same period the U.S. GNP was 7.7 trillion dollars.[21] Clearly the EU would have the economic capacity to properly fund a nuclear program if it desired to do so. Additionally, a "small" WNI consisting of the three countries mentioned earlier would be capable of funding such a force considering that France and Britain already fund their respective portions and the economic might of Germany with its approximately 1.7 trillion dollar GNP[22] would strengthen the WNI's financial basis.

3. The Question of Coverage

Working outwards from a Franco-British nuclear core, it seems clear that no European nuclear cooperation would be feasible without close German involvement. As pointed out earlier, a purely Franco-British nuclear arrangement might become such a cause of concern to Germany that there would be strong pressure against such co-operation unless the Germans were invited to participate.[23] Given the recent public expressions of shared vital interests among these three states, a cooperative effort to form a "small force" might be less difficult than it first seems. After all, Malcolm Rifkind, Britain's former Defence Minister and current Secretary of State for Foreign Affairs, declared in 1992 "that Britain would regard her own vital interests as at stake in any attack upon an Alliance member."[24] This implicitly includes the FRG. France, too, emphasized its perception of shared vital interests with Germany in 1995.[25] Finally, the Chirac-Major joint announcement of October 1995 confirms the coincidence of vital interests between France and Britain.[26]

This community of vital interests combined with the progress made in the Anglo-French Commission on Nuclear Policy and Doctrine[27] might allow for credible stop-gap assurances to be

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[21] Institute for National Strategic Studies. Strategic Assessment 1995: U.S. Security Challenges in Transition Editors Hans Binnendijk. Washington, D.C., 1994, p.198.

[22] Facts about Germany, Dr. Arno Kappler and Adriane Grevel, M.A. eds., (Frankfurt/Main: Societäts-Verlag, 1993), p. 217. approximately 3 trillion DM at an exchange rate of 1.8 DM/$.

[23] Document 1420, WEU, op. cit., paragraph IX.

[24] "Extending Deterrence?", --contribution to a colloquium on strategic issues, Paris, 30 September 1992, p. 19. Text provided by British MoD.

[25] This point is expanded on in Chapter 3 of this work. see: Juppé, Alain. "Speech delivered by the Prime Minister at the Institut des Hautes Etudes de Defense Nationale." Paris, 7 September, 1995, p. 5.

[26] United Kingdom, Edited transcript of press conference given by the Prime Minister, Mr. John Major, and President Chirac of France, London, Monday, 30 October 1995, p. 1.

[27] Shared views on matters of theory and doctrine do not presuppose similar concord regarding more operational issues. However, it is reasonable to assume that if the operational issues are initially limited to the division of responsibilities versus joint patrolling and employment, France and Britain might achieve agreement. See Document 1420, section IX, op. cit., for a discussion on agreements to date.

offered by France and Britain to Germany while more structured arrangements were negotiated.[28] France and Britain could further assure Germany by expanding the Anglo-French Commission to include Germany and, if deemed necessary, deploying nuclear weapons to German bases.

Regarding the larger European Union, similar steps (as noted above) would be required to fulfill any immediate desire to offer deterrence to a "large" group. In light of Mr. Rifkind's previously-quoted statement, Britain would need to remind its fellow WEU members and associate members—which are also members of NATO—of its perception of overlapping interests. France on the other hand, would need to make explicit statements that it had changed its well-publicized philosophy regarding the inadvisability of sharing deterrence.[29] Both countries could achieve this goal by offering unambiguous nuclear pledges as part of an interpretation of Article V of the WEU Treaty—which prescribes defense of the security of WEU allies with all available means.[30] The number of states to whom this assurance could be extended is certainly flexible and would be consistent with the calculations of the offering powers. It seems reasonable however, to conclude, that the largest group that could be quickly included under a "large" WNI umbrella would be the non-nuclear European members of NATO (except for Denmark, this coincides with the members and associate members of the WEU)[31] . This group already has an agreed upon NATO doctrine, strategy, and consultation mechanism relating to U.S. and British nuclear weapons, and as such constitutes a "ready-made" set of beneficiaries of extended deterrence. By extending deterrence quickly to this "large" group, the French and British may be

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[28] Since early 1995, several French officials have advanced various proposals for the "Europeanization" of France's nuclear deterrent. According to David Yost, Prime Minister "Juppé explained that France was not proposing 'extending deterrence' because this would be incompatible with relationships between equals, and could 'lend itself to a suspicion of paternalism' in German perceptions. Other French officials explained that it was not a proposal for 'shared deterrence' either, partly because the European Union was far from establishing a common executive branch that would have the authority to take nuclear employment decisions. For various reasons, Juppé and other French officials have suggested, it would be better to speak of *dissuasion concertée.*" These ideas form the theoretical basis for a concept that has yet to be either adequately developed or implemented. Please see Juppé et. al. cited in David Yost, "U.S. Nuclear Weapons in Europe: Prospects and Priorities," op. cit., p. 26.

[29] For example, the March 1994 statement by The French Defense Minister, Francois Leotard on the possible extension of deterrence to other European countries. "The major lesson I learned from General de Gaulle is that a nation's leaders alone are able to evaluate where their country's highest interests lie and when that interest is threatened. In the last resort a nation has no friends." cited in WEU Assembly document 1420, op. cit., section IX.

[30] Karl-Heinz Kamp, "European Nuclear Cooperation: Prospects and Problems." Presentation at the NATO's NPG Symposium 1996. March 3, 1996, p. 6.

[31] For an outstanding graphic representation of the asymmetries and overlaps in European security institutions, see the "Strategic Assessment..." op. cit., pp. 34-35.

able to prevent the concerns of these non-nuclear countries being translated into steps toward nuclear self-sufficiency.

4. Which Forum?

The question of forum is closely related to the question of coverage. Three existing fora which should be considered are the EU, the WEU, and NATO. In varying degrees, each of these might be appropriate for a "large" WNI. On the other hand, for a "small" force, either an *ad hoc* group or the Anglo-French Commission-*plus one* previously mentioned may be more appropriate.

The EU as a forum for WNI is problematic for two reasons:

- several EU members advocate national foreign policies that embrace either neutrality or anti-nuclear weapons provisions
- as an organization, it has essentially no experience with defence-related matters[32]

The Swedish Foreign Minister, Lena Hjelm Wallen, recently explained that her country supported the idea of a nuclear weapons free world and, therefore had no interest in nuclear deterrence or defense for the EU.[33] In the presence of such avowed anti-nuclear states, the time required to debate and reach consensus—if consensus could indeed be achieved—on a nuclear policy might exceed the time considered acceptable to those countries such as Germany and Turkey, which would be looking for rapid reassurances. Nuclear considerations in an EU forum would probably evolve into a wide-ranging discussion along the lines of the current process towards a CFSP which has been under way since the drafting of the Maastricht Treaty—a process which, experts point out, may still require years to complete and which offers no certain outcome.[34]

Another potential hurdle is the fact that the EU has indicated that it desires the WEU to assume the primary role in handling defense and security matters. Since the final nature of the relationship between the EU and the WEU has yet to be decided—the decision should be reached following the 1996 IGC—no merger has occurred that would place European nuclear experts who

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[32] Kamp, "European Nuclear...," op. cit., p. 10.
[33] Lena Hjelm Wallen cited in David S. Yost, "U.S. Nuclear Weapons in Europe...," op. cit., p. 28. Yost cites Jean Quatremer, "Le parapluie français ne séduit guère," Libération, 22 September 1995.
[34] Council of European Communities, Commission of the European Communities, Treaty on the European Union, Article J.4(1). This Article outlines the lengthy evolution to CFSP. see also, Peter Van Ham, "The Prospects for a European Security and Defence Identity," European Security, Vol. 4, No. 4, Winter 1995, London, Franc CASS, p. 543.

currently work for the WEU into the EU.[35] This lack of expertise might prove insurmountable for the EU in pursuit of a WNI.

Critics who discuss the traditional, evolutionary approach to a WNI argue that the WEU may also be fatally flawed as a possible large WNI forum on slightly different grounds:

- First, the large size of the WEU's full group of 27 participants—members, associate members, associate partners, and observers—would make the forum too unwieldy.

- Second, since a WEU-based WNI would make no provision for the participation of U.S. weapons, it would lack the necessary punch to credibly deter residual or resurgent Russian capabilities.[36]

It is true that the "variable geometry" WEU when expanded to include every category of participant is large—perhaps too large. However, this flexible structure, whether by design or by accident, allows for various degrees of commitment and responsibilities by European participants. The decision to offer associate membership to Iceland, Norway, and Turkey could significantly ease the process of rapid establishment of a WNI by offering coverage to the full and associate members of the WEU. As noted above, this process would only exclude one country currently covered by NATO's umbrella—Denmark.[37] Whether the decision was ever made to allow the WNI to extend coverage to Denmark, or to allow the Danes to "opt in," may be less problematic by virtue of the fact that Denmark's neighbor to the north, Norway, and to the south, Germany, would be covered and, hence, would grant Denmark a significant degree of protection as a "free rider." By this logic, several other West European countries such as Switzerland, Ireland, and Sweden might also receive some degree of residual protection—whether they wanted it or not. Ultimately, it seems, the main obstacle to taking advantage of the WEU as a forum may be the task of convincing those participants in the associate partner or observer categories that it is appropriate to exclude them from any explicit guarantees. Considering the fact that these countries are not covered under any current arrangement this problem hardly seems insurmountable .

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[35] For various WEU visions of the WEU-EU relationship, see The Western European Union, "WEU Contribution to the European Union Intergovernmental Conference of 1996," WEU Council of Ministers, Madrid, 14 November 1995. regarding the problems inherent in EU defense decision makeing see Van Ham, op. cit., pp. 530-43.

[36] See for example, Kamp, op. cit., p. 10.

[37] Denmark has been offered WEU membership, but to date has not accepted.

Regarding the second criticism, one German analyst has rather succinctly asked, "Does any member in the EU seriously suggest that the WEU can deal with Russia without the backing of the United States?"[38] Apparently, this argument is based on the analyst's assessment that the WEU lacks adequate nuclear and conventional forces to adequately deter Russia. Regarding the nuclear element in this reasoning, it may be worth noting that Russians familiar with current and past Eurasian nuclear issues interviewed by the authors of *this* paper expressed their view that a semblance of "strategic nuclear parity" exists between Russia and China.[39] This view was advanced despite the fact that Russia with its 8500+ strategic nuclear weapons enjoys a nearly 30-to-1 advantage over China's strategic nuclear force of less than 300 weapons.[40] As mentioned earlier, the force available to a WNI—both before and after planned reductions in 1998—would be significantly larger than that possessed by China. This evidence suggests that a WNI might represent a significant concern for present or future Russian nuclear planners. Nevertheless some of those who would be protected under such an arrangement may not consider the deterrent value of a WNI entirely sufficient.

Furthermore, the conventional force imbalance between Russia and the WEU should not be discounted. Based on numerous accounts of the Russian military's poor performance in the recent conflict in Chechnya, Russia's conventional force presents no immediate threat to the security of Western Europe. In the long term, however, any observed improvement in Russia's conventional capability would require an appropriate response from the WEU. It is also important to reemphasize the point that this chapter assumes that U.S. conventional forces would not necessarily depart Europe just because U.S. nuclear assurances to NATO were no longer considered credible.

The reader should recall that this is a "thought experiment," and— for the sake of analysis— it is assumed that the end of credible U.S. nuclear guarantees to NATO-Europe will not necessarily mean the end of NATO. It is difficult to conceive of an assumption which might be considered more heretical by many who closely follow European nuclear issues. In numerous interviews conducted by the authors, U.S. experts referred to nuclear weapons as "the glue that binds the Alliance." However, some French, German, and even British analysts interviewed by the authors noted that if they had to choose between U.S. nuclear weapons in Europe or 100,000

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[38] Holger H. Mey, "A European Security and Defense Identity...," op. cit., p. 316. The authors discussed this matter with Dr. Mey in August, 1996.

[39] Authors' interview with Russian nuclear experts in Monterey, California in 1996.

[40] Source for these numbers, SIPRI Yearbook 1995, op. cit., pp. 329 & 333.

U.S. troops, they would opt for the troops. The logic behind such thinking is that the troops represent "hostages" that would help ensure a U.S. response to either a nuclear or conventional attack on the NATO area. The nuclear weapons, on the other hand, present a potentially larger threat to any aggressor, but only to the extent that the aggressor perceives the U.S. is willing to engage in nuclear war to protect the territory of distant allies. Based on the views held by some Europeans that the U.S. should maintain its conventional force presence in Europe, and hence, its NATO membership, it is worth considering whether a "NATO-*lite*" (i.e., NATO minus U.S. NSNFs based in Europe) could be an acceptable forum for a WNI.

Several characteristics of the Atlantic Alliance might make it a strong choice for Europeans seeking a consultative body for WNI:

- NATO has well established and practiced methods for nuclear consultation.
- NATO's historical success indicates its arrangement for risk- and responsibility-sharing has been deemed acceptable by both nuclear and non-nuclear Allies.
- Each of NATO's fourteen European members has agreed to a Strategic Concept that emphasizes the continued relevance of nuclear weapons in the current European environment.

Since 1967, NATO's Nuclear Planning Group has served as a means to discuss Alliance nuclear issues.[41] The NPG allows NATO's nuclear and non-nuclear members a voice not only in the formation of nuclear strategy, but also in the handling of everyday nuclear affairs.

> These discussions cover deployment issues, safety, security and survivability of nuclear weapons, communications, command and control, nuclear arms control and wider questions of common concern such as nuclear proliferation. The Alliance's nuclear policy is kept under review and decisions are taken jointly [by nuclear and non-nuclear members] to modify and adapt it in the light of new developments and to update and adjust planning and consultation procedures.[42]

The NPG Staff Group carries out the more detailed work of the body. Other NATO mechanisms such as the High Level Group (HLG) and the Senior Level Weapons Protection Group (SLWPG) meet on an *ad hoc* basis to discuss specific aspects of NATO's nuclear policy.[43]

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[41] Kaplan, op. cit., p.107.
[42] NATO Handbook, op. cit., pp. 113-114.
[43] Ibid.

A significant obstacle to NATO's ready-made nuclear consultation mechanism for WNI is the fact that France, a major potential guarantor of a WNI, does not currently participate in NATO's formal nuclear discussions and has not done so since 1966. Despite the December 1995 indications from Defense Minister Charles Millon that France would not exclude future participation in the NPG,[44] other French officials have indicated their opposition to any steps in that direction. For example, in January 1996, the French Permanent Representative to the North Atlantic Council said that the NAC would be the appropriate forum for discussions regarding nuclear issues.[45] Although in the present circumstances such French participation may seem unlikely, in this analysis it is assumed that France might be willing to join an NPG in which it would be able to play a starring role instead of that of understudy to the U.S.

The NATO concept of nuclear risk- and responsibility-sharing has long been considered a strength of the Alliance. As mentioned in Scenario #1, this system currently relies on NSNFs deployed in Europe, "with delivery systems provided by both nuclear and non-nuclear allies....They also allow the risks and burdens of NATO's nuclear posture to be shared through wider participation. Widespread participation is manifest not only in the basing of nuclear forces, but also through participation in common funding of infrastructure and in collective planning through institutions such as the Nuclear Planning Group."[46] The NATO position is that these arrangements help to prevent an adversary from misinterpreting Alliance solidarity and also reassure Allies who might otherwise "feel singularly exposed to future threats."[47]

These same arrangements could be adopted by the members of a WNI. The burden, of course, would be on France and Britain to prove that their extension of deterrence is real by making available weapons—most likely gravity bombs or air-to-surface missiles—either for the basing in or delivery by participating countries. While certain logistical aspects may complicate the process, conversion of other Allies' aircraft would not be an insurmountable obstacle to motivated, financially solvent participants.[48]

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[44] Defense Minister Charles Millon cited in David S. Yost, "U.S. Nuclear Weapons in Europe...," op. cit., p. 26.

[45] Statement by Gérard Errera, French Permanent Representative to the North Atlantic Council, 17 January 1996, cited in Ibid.

[46] Gregory L. Schulte, Director of NATO's Nuclear Planning Directorate, "NATO's Nuclear Forces in a Changing World," NATO Review, Web Edition, No. 1, vol. 41, Feb. 1993, pp. 17-22.

[47] Ibid.

[48] Two of the seven NATO countries that provide delivery systems for NATO weapons under the current scheme have reportedly requested money from the U.S. to *modify* and *certify* aircraft for NATO nuclear

The Alliance's Strategic Concept has been discussed in other chapters of this work. What is important to reiterate here is that this concept represents, among other things, a nuclear consensus. In 1991 each Ally indicated support for the Alliance's nuclear posture in the New Strategic Concept. More importantly, this support is reconfirmed through periodic Communiqués of the DPC/NPG which repeat the familiar principles—for example:

> We reaffirmed that Alliance nuclear forces continue to play a unique and essential role in the Alliance's strategy of war prevention, while recognizing that NATO has been able to reduce its reliance on them in the new security environment. The supreme guarantee of the security of the Allies is provided by the strategic nuclear forces of the Alliance. In addition, Alliance solidarity, common commitment, and strategic unity are demonstrated through the current basing of deployable substrategic forces in Europe.[49]

Ultimately, consensus around a WNI may be least difficult to achieve within NATO. Its members know the language, support the concepts, and understand the stakes. If France and Britain put a genuine and credible alternative to a defunct U.S. guarantee on the table, the members of the world's oldest nuclear Alliance might accept it rather than face the uncertain consequences of going it alone. This proposition deserves more extensive analysis, however.

D. FORCE CHARACTERISTICS OF A WNI

The number of U.S. weapons physically stationed in Europe would be zero or effectively zero if credibility had been lost. Forces available to a WNI might vary from 600-800 strategic weapons and 100-200 NSNFs. In all cases, nuclear consultation would continue to occur. The number of Allies involved would vary from 3 in the case of the "small" WNI to 14 or more in the case of the "large" WNI. The U.S. role in these consultations would be minimal if it existed at all. Assuming the WNI occurred either in the WEU or NATO forum, the policy would clearly retain a significant NATO-wide capability[50]—perhaps even more so than the current arrangement, which some critics argue, lends the U.S. a disproportionate share of influence. The U.S. influence on WNI policies would probably be minimal. Theoretically, the U.S. Article V commitment would not be affected by any circumstances which might lead to the erosion or elimination of U.S. nuclear guarantees as long as the U.S. continued to express interest in the conventional defense of

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strike missions. Source: GAO, "NATO Nuclear Bases...," op. cit., p. 4. Apparently this on-going effort has not caused problems under the current setup and therefore may not be a problem for a WNI.

[49] NATO, DPC/NPG, Press Communiqué M-DPC/NPG-2(95)117. Brussels: 29 November, 1995. This is only one example of nearly identical statements since 1991 and earlier.

[50] Minus the U.S., of course.

Europe. Nothing in the North Atlantic Treaty requires the presence of U.S. NSNFs in Europe or proscribes the development of a WNI. Either no country would maintain a U.S. nuclear presence on its soil or, if the U.S. NSNFs remain, they would have essentially been rendered impotent through loss of credibility. Under either a large or a small WNI, force readiness should not change. Regarding military flexibility, either WNI would retain the same diverse capabilities of the current posture. Less ambiguous French participation would actually improve the flexibility by bringing carrier-based DCAs to a WNI. Figure 6.1 summarizes these characteristics.

Nuclear Force Characteristics: Scenario #3 West European Nuclear Identity	
# of US Weapons in Europe	Zero*
NATO Nuclear Consultation	YES
NATO-Wide Capability	Variable Minus US
US Article 5 Strategic Linkage	YES
# of US Weapons Basing Countries	Zero**
Level of Military Readiness	Similar
Level of Military Flexibility	Similar

*Number of European Weapons 600-800
**Effectively Zero due to Lack of Credibility

Table 6.1 Force Characteristics

E. ANALYSIS AND CONCLUSION: A WNI AND EURASIAN STABILITY

1. Deterrence and Politics

An assumption inherent in this analysis is that if more countries took part in the decision to use a nuclear weapon and more countries participated in the actual nuclear strike, the entire nuclear event would be considered more legitimate. From this perspective, the "large" WNI approach would be no less legitimate than the Alliance's current approach. As outlined above, essentially the same states that accept nuclear risks and responsibilities in the present NATO arrangement would be offered roles in a WEU- or NATO-based WNI. However, if either France or Britain chose not to allow their WNI partners to deliver nuclear systems under an arrangement in parallel with NATO's current plan for broad national participation, legitimacy would suffer.

The "small" WNI approach would represent a more serious challenge to the legitimacy of West European nuclear use. A Europe which had lost its "internal federator" on nuclear issues (i.e., the U.S.)[51] as well as the credibility of America's offshore nuclear guarantee, would be hard-pressed to attach much legitimacy to what would amount to an *ad hoc* tripartite nuclear consortium that would leave many former security partners to fend for themselves in matters relating to their ultimate security interests. Under the current NATO arrangement, sixteen democracies—one of them the world's major power—stand behind any contemplated use of nuclear weapons by the Alliance. However, under the "small" WNI arrangement, only three medium-sized democracies—albeit Western Europe's premier powers—would participate in the decision to use nuclear weapons. Such an employment of nuclear weapons would probably not carry the same legitimacy as one sanctioned by the current 16 member Alliance.

Alliance cohesion is another area that might be damaged. That Western Europe could achieve a WNI is no certainty. Josef Joffe, a skeptic, points out that "[l]eft to their own devices, the Europeans might not ascend from a more perfect customs union to a truly common defence, but instead fall back to the renationalization of defence and diplomacy."[52] Much of the responsibility for maintaining West European cohesion would rest on the shoulders of the European nuclear powers. "France and Great Britain will have to convince those among their partners that are reluctant at the outset that they do not want to see their special status confirmed, [and] that they are not asking for financial participation without offering security in return."[53] Again, convincing plans for risk- and responsibility-sharing along the lines of the well-tested NATO model might help to allay the concerns of the non-nuclear participants in a WNI.

To the extent that non-nuclear members lost confidence in or were excluded from a WNI, Alliance cohesion would probably suffer. However, should a future NATO or WEU successfully complete the transition to a reliance on a WNI for nuclear security, embrace a new nuclear posture (based on French and British systems), refine its consultative mechanisms, and rewrite its strategy to account for these changes, it might be as cohesive as the current Alliance. In short, just as in

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[51] Karl-Heinz Kamp, "European Nuclear Cooperation...," op. cit., p. 7. Kamp refers to the role of the U.S. within NATO as that of an internal federator, implying that the U.S. exercises some guiding authority over its Allies. Without the U.S. status as the nuclear guarantor, a degree of this influence would certainly be lost. To the extent that the U.S. maintained credible conventional force commitments in Europe, this loss of influence might be attenuated.

[52] Joffe, "Collective Security...," p. 47.

[53] Daniel Vernet. "Nuclear Policy: The Difficult 'Concerted' Deterrent." Le Monde, 20 Jul. 1995: pp. 1+, FBIS Translation.

Scenario #2, extraordinary care would be required for Alliance cohesion to remain solid under an arrangement for a WNI.

2. Strategic Concerns

As noted elsewhere in this thesis, the threat of a massive invasion of Western Europe by Russia currently seems quite remote and is likely to remain so in the foreseeable future. However, regardless of Russia's presumed peaceful intentions, a WNI must be able to account for the still-formidable nuclear capability of Russia. A WNI must also address Russia's long term aims in Western Europe. One German recently asked the question, "Will the geostrategic aims of a democratic Russia differ significantly from those of a Tsarist or Soviet Russia?"[54] If the answer to this question is "no," and if one accepts the idea that NATO's forces played a role in hindering the achievement of Soviet Russia's geostrategic aims during the Cold War, then one should also accept the imperative for a WNI to maintain the capability to deter any Russian opportunism during the post-Cold War period.

According to Russians interviewed by the authors of this thesis, some Russian analysts and officials assume that a degree of strategic nuclear stability *can* exist between states possessing asymmetric nuclear forces. This is based on Russia's perceived vulnerability regarding China's nuclear posture. Without significant strategic defenses to stop them, two to three hundred nuclear strikes could cause unacceptable damage to Russia. Thus, the fact of Russian vulnerability could outweigh Russia's superior capabilities for conducting massive retaliatory strikes.[55] Based on this logic, either a large or small WNI might be sufficiently threatening vis-à-vis Russia, thus preserving nuclear deterrence.[56]

Another assumption inherent in previous chapters is that currently NATO clearly perceives a role for its nuclear forces in deterring "new" WMD threats (versus WMD acquisition). An important caveat, however, is that perceived numerical advantages in nuclear forces currently enjoyed by NATO over any potential proliferant—which would also be the case for a WNI—would probably not significantly influence a proliferant's decision to threaten Western Europe with nuclear weapons. Either a "small" or a "large" WNI would be a more capable nuclear force than could be developed by any foreseen proliferant regime in the current environment.

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[54] Interview with a German analyst in Monterey, California, August 1996.

[55] This point came out during the course of general discussions with Russian experts who closely follow nuclear issues.

[56] However, stability in the nuclear age has, at least in some cases, been affected more by political factors than the technical characteristics of the force postures of potential belligerents.

Therefore, to the extent that today's NATO feels a proliferant state may be willing to disregard a clear nuclear imbalance and threaten the Alliance with a nuclear strike, the existence of a WNI would not significantly alter that state's impulse.

The ability to deter a proliferant state determined to make threats may be more related to the apparent resolve of the West Europeans. The leadership of France and Britain would be key to demonstrating this resolve. A historical example helps underscore the magnitude of the responsibility with which Western Europe's two current nuclear powers would be saddled. "The perceived costs of collective security were high enough to discourage Britain and France in 1935-1936. How much more would nations hesitate under nuclear conditions, when the price of obligation has risen to megadeath."[57] The vigor with which France and Britain embrace this obligation and allow their WNI partners to do the same may make all the difference.

3. WMD Proliferation

The *Motives* section of this Scenario addresses the idea that certain states might consider nuclear acquisition if they perceived that their security needs were not being met. As was discussed above, some experts believe that U.S. NSNFs have helped contain the concerns of non-nuclear Allies regarding their own vital security interests—interests that, if threatened, might lead these Allies to consider a national nuclear option.[58] Germany is not specifically discussed as a potential proliferant *under* a WNI because both the "large" and the "small" WNI outlined in this work would necessarily seek to satisfy Germany's desire for protection.

Although any non-nuclear country left out of a "small" WNI is a theoretical candidate for internal proliferation, Turkey was mentioned because of its pressing security concerns. In each case, though the potential consequences of proliferation might be severe in terms of international or intra-Alliance censure, internal proliferation cannot be ruled out. Also, as was discussed in Scenario 2, should one or two Alliance members choose to pursue the nuclear option, a destabilizing "domino effect" resulting in numerous West European nuclear-armed states may well be the result. Some observers have suggested, for example, that Italy might follow

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[57] Josef Joffe. "Collective Security and the Future of Europe." Survival Spring 1992: p. 45.

[58] This point was made in the analysis of the previous option, but it bears repeating. This theme runs through numerous interviews conducted by the authors with government and non-government Americans, Russians, and Europeans. Two articles which offer a provocative treatment of the notion of internal proliferation are: Thomas Enders, Holger H. Mey, and Michael Ruhle. "The New Germany and Nuclear Weapons." op. cit. and Duygu Bazoglu Sezer: "Turkey's New Security Environment, Nuclear Weapons, and Proliferation," Comparative Strategy, Vol. 14 (April-June 1995).

Germany's example and that Greece might consider seeking nuclear weapons if Turkey did so.[59] The prospects for internal proliferation, it seems, might be high for a "small" WNI and would vary depending on the credibility of deterrent guarantees extended by the nuclear powers under a "large" WNI arrangement.

As was pointed out in the proliferation analysis of Scenario #2, NATO, in its official statements does not claim that its force posture can prevent external proliferation. The analysis for Scenario #2 documented NATO's preference for diplomatic instruments such as the NPT as "the cornerstone of NATO's non-proliferation effort."[60] However, internal proliferation could have significant effects on proliferation outside the NATO European area. If a country such as Turkey responded to doubts about a WNI by acquiring its own nuclear weapons, it might inadvertently inspire some of its neighbors in the Middle East and the southern Caucasus to do the same. In other words, to the extent that the development of a WNI may encourage proliferation internal to NATO, it could also affect proliferation prospects outside the NATO area.[61] Figure 6.2 summarizes this analysis.

Summary of Analysis: Scenario #3 WNI	DETERRENCE & POLITICS		STRATEGIC CONCERNS		WMD PROLIFERATION	
	Nuclear Legitimacy	Alliance Cohesion	Russian WMD Threats	"New" WMD Threats	External Proliferation	Internal Proliferation
	↕	↕	↑	—	—	↑

Table 6.2 Summary of Analysis

[59] David S. Yost, "Nuclear Debates in France," Survival, Winter 1994-95, p. 127 & note 43.
[60] Numerous NATO documents tout the NPT and other diplomatic efforts as the core of NATO's non-proliferation efforts, for a recent example, see: NATO. Final Communiqué: The Defense Planning Committee and the Nuclear Planning Group of NATO." Press Communiqué M-DPC/NPG-1(95)57. Brussels: 8 June 1995, par. 25.
[61] Turkey is mostly outside "Europe"—as a geographical expression.

F. KEY FINDINGS

- **A potential WNI would encounter the fewest obstacles if created within NATO, instead of exclusively within an EU or WEU forum.**

- **Two points are essential in assessing the credibility of a WNI's deterrence posture.**

    - **Based on analysis of the effectiveness of the asymmetric—but nonetheless stable—deterrent relationship between the Russian Federation and the People's Republic of China, the quantity of weapons available to a WNI should be capable of similarly deterring Russia. (Whereas Russia has an approximately 30:1 advantage over China in nuclear systems, it would have only a 15:1 advantage over a WNI.)**

    - **The real challenge for a WNI would be to unambiguously demonstrate the willingness to use that force.**

- **Any Alliance member which is not convinced that its security is adequately assured by a WNI would strongly consider acquiring its own nuclear weapons, notwithstanding any prior international agreements. Due to the premium they attach to current U.S. nuclear commitments, this especially applies to Germany and Turkey.**

VII. SCENARIO #4: AN AIR-DELIVERED NUCLEAR FORCES (ANF) REGIME

The problems of victory are more agreeable than the problems of defeat, but they are no less difficult.[1]

Sir Winston Churchill, 11 November 1942

A. INTRODUCTION

Sir Winston Churchill's words ring true today. As the United States and its Western allies emerge from the Cold War, they face the challenge of dealing with one of the most enduring legacies of that conflict, the Russian nuclear weapons arsenal and its nuclear archipelago. In September 1994, John Deutch, then Deputy Secretary of Defense, hinted at a means to address this problem when he said that "non-strategic nuclear forces remain one of the central problems we will be facing in managing our nuclear relationships during the coming years." He added that "not every initiative with the Russians has to be in the context of a post START strategic nuclear agreement. There could be another kind of agreement which has to do with security of forces, including their controllability which we think is so important; improving the pace at which they dismantle their nuclear weapons; it could have to do with non-strategic nuclear weapons."[2] The scenario discussed in this chapter presents a potential solution to the challenges created by the still non-limited category of non-strategic nuclear weapons. It posits an arms control regime beyond START I and II, based on the principles of reciprocity and transparency, and the control of weapons and warheads (instead of delivery systems).

On 25 December 1991, Boris Yeltsin announced the creation of the Russian Federation as a fully independent power, and with it the culmination of a year that brought forth not only the official end of the Soviet Union, but also tectonic changes in the Eurasian political and security landscape. Although the peaceful dissolution of the Soviet Union was accompanied by widespread euphoria and anticipation, the period since 1991 has shown that history in Europe has not ended—the task of maintaining security in the European area is still at hand. In testimony

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[1] Sir Winston Churchill cited in The Columbia Dictionary of Quotations, CD-Rom Version. New York: Columbia University Press, 1993.

[2] Comments by John Deutch, Deputy Secretary of Defense, at the Nuclear Posture Review press conference, news release by the office of the Assistant Secretary of Defense for Public Affairs, September 22, 1994, pp. 5-6, 12-13.

before the Senate Committee on Foreign Relations, Senator Richard Lugar sharpened the current focus on perhaps the most fundamental security concern in Europe:

> The single most important truth about the security environment in which we now live is that Russia is convulsed by a genuine, ongoing revolutionary transformation of the state, the economy, the military, and the society. But unlike prior revolutions, history has chosen to store in the midst of this current Russian revolution a superpower arsenal of nuclear weapons and nuclear materials.[3]

As a result, the nuclear threat to NATO and the United States can no longer be viewed in terms of the classic high-threat, but relatively stable Cold War paradigm. Instead, officials are increasingly concerned about the political and economic stability of the Russian Federation and its capacity to control, operate, and manage a wide-ranging nuclear arsenal and fissile materials complex.

From a NATO perspective, one of the most significant developments in the post-Cold War period for nuclear policy makers has been the reconfiguration of the Alliance's nuclear forces. Today NATO's nuclear forces are no longer on quick reaction alert, and "they are neither targeted against any particular enemy nor planned for any specific scenario."[4] This occurred as a natural progression to the relaxation of tensions between East and West and the decreasing likelihood of a Russian attack against the Atlantic Alliance. In 1991 NATO replaced the 1967 strategy of Flexible Response with the New Strategic Concept, a follow-on to the 1990 London Declaration which reduced the role of nuclear weapons to "weapons of last resort." Today, policy makers increasingly focus on transparency and threat reduction regimes in order to come to terms with the Cold War Russian nuclear weapons legacies mentioned above and in Chapter 2 of this work.

Just as the end of the Cold War did not signal the end of history, so it also fails to represent the end of the nuclear weapons age. Undoubtedly nuclear weapons and the knowledge and expertise regarding their existence will be present for the foreseeable future. Therefore, in the words of one Russian writer, "the military and political significance and role we attach to nuclear weapons in the emerging new European security architecture will continue to shape perceptions and influence strategic thinking world wide."[5] The new strategic relationship with Russia will

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[3] Prepared testimony of Senator Richard S. Lugar before the Committee on Foreign Relations, Subcommittee on Europe. Lexis-Nexis (Federal Information Systems Corporation, Federal News Service), August 22, 1995.

[4] In other words, NATO currently does not posture a target list nor an employment strategy for these nuclear weapons. Instead, NATO operates under the principle of adaptive targeting. See "Nuclear Weapons and European Security." C. Richard Nelson, ed. The Atlantic Council of the United States. Bulletin. Vol. VI, No. 13, October 31, 1995, p. 2.

[5] Konstantin E. Sorokin, "The Nuclear Strategy Debate." Orbis, Vol. 38, No. 1, Winter 1994, p. 26.

require a regime based on effective deterrence, one which posits nuclear forces as part of the foundation of future stability. Optimally, such a regime would envision both sides fielding a lower number of strategic nuclear forces (START II levels or lower) with secure second-strike capability and a highly reliable strategic warning and command and control system. The notion that nuclear weapons, albeit in a reduced number, contribute to a stable environment and the prevention of war between the world's major powers is accepted among most policy makers and security experts, notably by those in the nuclear weapons states. However, such a nuclear regime cannot be constructed on the basis of the current nuclear legacy of the former Soviet Union (please see Chapter 2).

1. Unilateral Initiatives

In 1991 President George Bush, in an effort to "roll back" the nuclear threat to NATO Europe and reduce the great number of tactical nuclear weapons in U.S. and Soviet arsenals, brought forth an initiative to limit this class of weapons. On September 27, 1991, he announced a dramatic set of unilateral withdrawals and simultaneously invited Soviet reciprocity.[6] The Bush initiative contained several elements, the most striking of which involved the removal and destruction of nuclear artillery shells and nuclear warheads from tactical ballistic missiles, as well as the withdrawal from operational deployment of naval tactical nuclear warheads. This resulted in the destruction of more than 3,000 tactical weapons and the removal of another 1,275, leaving only aircraft-delivered nuclear bombs in the deployed tactical inventory of the United States.[7] On 5 October 1991, President Gorbachev responded to the U.S. initiatives and announced that the Soviet Union "would unilaterally withdraw and destroy all nuclear artillery shells and short-range missile warheads and that it would withdraw naval tactical nuclear weapons and air defence missile warheads to central storage."[8] While both initiatives were positive measures and contributed to raising the nuclear threshold, they are neither verifiable nor irreversible. As Jonathan Dean points out, "the two governments are dismantling the warheads of tactical-range delivery systems withdrawn by informal agreement between the Bush and Gorbachev governments. But there is no explicit agreement on this subject between them, as yet no verification or monitoring of what is going on, and no monitoring of the resulting stocks of fissile

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[6] Information regarding the 1991 unilateral initiatives is taken from Steven E. Miller's account in "Western Diplomacy and the Soviet Nuclear Legacy." Survival, Vol. 34, No. 3, Autumn 1992, pp. 8-9.
[7] Ibid., p. 8
[8] Ibid., p. 9.

material."[9] The fact remains that, although there is a legacy of arms control and disarmament treaties with respect to strategic and intermediate range nuclear systems, there is no formal or legally recognized treaty limitation on tactical nuclear weapons—ironically the category in the Russian arsenal the most susceptible to security, management, and operational control problems.

B. ASSUMPTIONS

1. Nuclear Forces and Arms Control: Scope and Philosophy

Scenario #4 raises the concept of an arms control and disarmament regime which addresses all air-delivered nuclear weapons deployed by NATO (U.S. weapons as well as French weapons), and the Russian Federation. The impetus for such an arrangement stems, at least in part, from a long-term trend in arms control policy. As Bruce Blair explains, "the risk [of nuclear employment] is being unintentionally driven up by a deep-seated bias in U.S. arms control strategy. The American obsession with Soviet counterforce capabilities resulted in the reduction of the forces that happened to have the strongest safeguards (the silo-based missiles) and in greater Russian reliance on weapons with relatively weak safeguards," most importantly, the air-delivered, theater-based nuclear weapons.[10] Ironically, as politicians and policy makers trumpet the successes of strategic reductions and the achievements of the START agreements, Russia has increasingly focused on a rhetorical and doctrinal campaign to enhance the credibility of nuclear warfighting threats by legitimizing theater or tactical nuclear systems. Most would agree that while all-out strategic nuclear war is unlikely to occur, the employment of theater or tactical nuclear weapons is much more plausible and according to some (especially in Russia), a legitimate solution to certain military dilemmas. Ivo Daalder addresses the heart of the problem when he writes that an arms control focus on long-range, land-based missiles eventually created a new gray area problem concerning nuclear weapons systems, because air- and sea-based TNF were excluded from prior negotiations.[11] The gray area problem is encouraging the Russian development, integration, and deployment of "trans-firebreak" weapons, the very systems which, more than any other nuclear weapon, erode the barrier between conventional and nuclear warfare.[12]

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[9] Jonathan Dean, "The Final Stage of Nuclear Arms Control." Lexis-Nexis (The Center for Strategic and International Studies and the Massachusetts Institute of Technology, the Washington Quarterly), Autumn 1994.

[10] Blair, "Russian Control of Nuclear Weapons," p. 61.

[11] Daalder, The Nature and Practice of Flexible Response, p. 199.

[12] These weapons may be termed "trans-firebreak" systems because of the argument that, due to their generally lower yields (with some notable exceptions) and their flexibility as non- or pre-strategic delivery systems (e.g. fighter-bomber aircraft) they are more likely to be employed than, for example, an ICBM or

The necessity for a new arms control initiative addressing this gray era is even more timely given (1) the nature and extent of Russia's nuclear dilemmas, (2) the threat of pre-mature nuclear use by Russian conventional forces in a desperate position, (3) increasing concerns regarding the long-term threats of nuclear proliferation, (4) the efforts of NATO and the United States to raise the nuclear threshold, and (5) the unique and unprecedented alignment of geostrategic forces in Eurasia. This is not to say that arms control and disarmament initiatives are a panacea capable of reliably providing regional and global security and stability in all circumstances. Arms control cannot exist outside the bounds of national security policy. Arms control and disarmament regimes are inherently political and involve wide-ranging efforts to create multilateral stability and transparency. They are "elements of national security policy [by] which nations seek to regulate their respective military forces through mutual agreement," but simultaneously, the political context surrounding arms control is not an agenda to be created, but an environment to be managed.[13] As Hedley Bull once noted, "it is a gross error, yet not an uncommon one, to believe that the military relations of nations exist in one compartment and their political relations in another, and that opposite tendencies can prevail in each compartment."[14]

Arms control for arms control's sake is therefore an irrelevant concept. "The effectiveness of arms control, like national military strategy, must be judged according to whether it increases security."[15] Furthermore, any agreements must shore up the long-term security of all participants involved. In the words of President Ronald Reagan, "we must seek agreements which are verifiable, equitable, and militarily significant. Agreements that provide only the appearance of arms control breed dangerous illusions."[16] In order to achieve these goals, an arms control and disarmament regime as envisioned under Option #4 must accomplish the following:

1. On the political level, it must maintain the predictability of the relationship between NATO and the Russian Federation (in order to facilitate evolutionary, not sudden, disruptive change in the strategic relationship). This requires—
   - the building of mutual confidence between former adversaries;
   - the preservation of Alliance cohesion within NATO; and
   - a sustained defense consensus within the domestic arena.

SLBM. While this argument does not address the motives behind employing a nuclear weapon, it does speak to the ladder of escalation and the fact that these weapons—because of their potential position on the lower rungs of this ladder—are more "usable" in the early stages of a conflict than an ICBM or SLBM. It is, however, acknowledged that air-delivered weapons could be used for "strategic" purposes, notably in operations in conjunction with ICBMs and SLBMs.

[13] Foerster Schuyler at al, Defining Stability. Boulder: Westview Press, p. 9.

[14] Hedley Bull cited in Foerster et al, Defining Stability, p. 9.

[15] Ibid., p. 45.

[16] President Ronald Reagan cited in Mayars, Teena. Understanding Weapons and Arms Control. Washington: Brassey's (U.S.), Inc., 1991, p. 23.

2. On the military level, it must reduce incentives for premature use of nuclear weapons (from all participant's perspectives) by increasing the likelihood of attack failure and risks associated with failure. This requires—
   - the preservation of the capacity to respond to a plethora of threats (not necessarily on the nuclear level) in a timely and effective manner; and
   - increased transparency in nuclear weapons matters.[17]

In the end, the arms control regime set forth by Scenario #4 must embrace new levels of transparency between NATO (primarily the United States and France) and the Russian Federation. Unless new levels of transparency between the two sides can be achieved, this scenario will fail. Similarly, unless all parties are convinced that the regime is based on reciprocity, the requisite level of confidence will not be achieved. An arms control regime that is an integral element of the national security strategies of all parties, and the mechanisms of which are robust, will enable NATO, France, the United States, and Russia to raise the nuclear threshold and solidify the foundation for long-term stability in the Eurasian area.

C. DEVELOPING THE SCENARIO: THE ROAD TO AN ANF REGIME

1. The Air-delivered Nuclear Forces (ANF) Regime

The ANF regime proposes a global limit on air-delivered nuclear weapons—that is, any nuclear weapon delivered by any type of aircraft (the limit is on the weapons and not the delivery systems).[18] The regime would engage the Russian Federation and the two NATO countries that are expected to retain air-delivered nuclear weapons—the United States and France. In general, it proposes to reduce and canton all weapons in declared sites. In subsequent stages, the numbers of weapons at each of the sites would be further reduced, and eventually, all these air-deliverable weapons would be destroyed in mutually monitored facilities.

The ANF regime attempts to remedy several deficiencies that have historically plagued arms control efforts.[19] First, the ANF regime incorporates both arms control as well as

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[17] This conceptualization is taken from Foerster's description of an effective arms control regime as applied to the CFE negotiations in Defining Stability, p. 46.

[18] The focus is on air-delivered nuclear weapons because these systems, traditionally classified as "tactical" or "non-strategic" or "theater" weapons, actually can be seen as "strategic" or "pre-strategic" systems. In this sense, a gravity bomb or cruise missile that is delivered from a bomber or fighter-bomber from thousands of miles away (with limited warning) is a more offensive, deep-strike weapon when compared to, for example, a lower yield nuclear shell fired from an artillery piece.

[19] "The discourse of arms control generally revolves around two commonly accepted and basic terms: "(1) arms control—the exercise of restraint on the development, deployment, or use of a particular weapon or category of weapons; and (2) disarmament—reductions in the number of a particular weapon or category of weapons." Many previous agreements have not fully concentrated on achieving both of these elements.

disarmament initiatives. Second, while the United States and the former Soviet Union have a legacy of arms control and disarmament initiatives, none of the agreements reached so far have addressed two principal issues: (1) the limitation of theater-based nuclear weapons (other than the INF Treaty); and (2) the limitation, reduction, and elimination of actual weapons or warheads. The ANF regime proposes to limit the air-delivered weapons within the theater nuclear weapons category, and furthermore, it proposes to limit, reduce, and destroy not delivery systems, but actual warheads.

In order to adequately outline the Air-delivered Nuclear Forces regime proposed under Scenario #4, this section presents several areas for consideration:

- Preconditions for Engagement
- The Multi-Phased Approach
- Potential Obstacles
    - Technical Hurdles: Operational Mechanisms, Detection, and Verification
    - Political Challenges: France
    - Legal Obstacles: The START Treaties
    - Russian Motives and the 1991 Initiative

a. Preconditions for Engagement

While an in-depth discussion of their merits or drawbacks is beyond the scope of this study, it would be unwise not to acknowledge that before any fresh initiatives can go forward, all sides need to reach conclusions about several relevant and, in some cases, controversial policy issues. These include, but are not limited to, START I/II, a fissile materials cutoff agreement, and the development of significant transparency initiatives.

Although the ratification and full implementation of START II is probably not required for an ANF regime to be pursued, these developments would certainly be conducive to the overall acceptance of nuclear arms control within domestic political circles. Furthermore, it would make little sense to carefully limit and dispose of the excess highly-enriched uranium (HEU) and plutonium (Pu) resulting from dismantled warheads from an ANF agreement, if unrestricted and unchecked production of fissile materials continued. Most observers in Western nations agree that it makes sense to halt the further production of materials that are already present in quantities far in excess of security needs (although both the Russians and the Chinese continue to produce fissile materials). Hence, a fissile materials cutoff is a reasonable prerequisite to implementing an ANF regime. Finally, although there are several transparency programs in place,

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Pfaltzgraff, Robert. "National Security Policy and Arms Control," in The Nuclear Reader. Kegley, Charles and Eugene Wittkopf eds. New York: St. Martin's Press, p. 155.

the scope of these initiatives needs to be significantly expanded.[20] Recent efforts in this area have not proven very successful, owing in large part to Russian efforts to avoid implementing the May 1995 Yeltsin-Clinton agreement on stockpile transparency, as well as repeated Russian foot-dragging in transparency issues as a whole. Russian hedging in this area comes, to some degree, as a result of the continuing debate about the role of nuclear weapons as well as the perceived high utility of nuclear weapons as a whole. Current transparency programs, however, could serve as precursors to the more extensive programs that would be required for a workable ANF regime to in the future.

On the other hand, one promising level of interaction is on the lab-to-lab level. Under the auspices of scientific and technological exchanges and joint problem-solving, individuals working directly for the national laboratories have often been able to achieve more in one afternoon than highly placed officials have been able to negotiate over several months. An example of this level of interaction is the exchange between Sandia National Laboratories and the Kurchatov Institute in Moscow, during which Sandia technicians worked to install a "comprehensive upgrade of physical security arrangements and materials control and accounting procedures."[21] In a different case, the Institute for Experimental Physics in Arzamas-16 (MINATOM's counterpart to DOE's Los Alamos National Laboratory) and Los Alamos National Laboratory have begun to cooperate in the area of fissile materials control and accounting.[22] As Frank von Hippel, the former Assistant Director for National Security in the Office of Science and Technology Policy, points out, "this 'lab-to-lab' program has taken off more quickly than the government-to-government approach, not surprisingly, because it empowers U.S. and Russian technical experts to negotiate directly with each other..."[23] This type of interaction is productive and may lead to the transparency level required to implement a warhead accounting and destruction agreement such as the proposed ANF regime.

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[20] The Cooperative Threat Reduction (CTR) program under Nunn-Lugar funding, the Safe and Secure Dismantlement Program (funded by DoD under a government-to-government agreement and administered by the Defense Nuclear Agency), and the Exchange in the Fields of Nuclear Weapon Safety and Security (a government-to-government program signed under the auspices of the Gore-Chernomyrdin commission) are examples of transparency programs in place today. See the prepared statement of Albert Narath, Director of Sandia National Laboratories, before the U.S. House of Representatives Committee on National Security, Subcommittee on Military Procurement, March 29, 1995.

[21] Frank Hippel, "Fissile Material Security in the Post-Cold-War World," in Physics Today, Vol. 48, No. 6, June 1995, p. 28.

[22] Ibid., p. 28.

[23] Ibid., p. 28.

While the initiation of an ANF regime need not be contingent on any of the conditions mentioned above (except for a fissile material cutoff agreement), their implementation would certainly boost the likelihood of its success. Progress in all areas is not a firm prerequisite, because the ANF regime may act as an instigator for further negotiation in its own right. Currently, the process of nuclear disarmament is stalled as the United States and its NATO allies await START II ratification and implementation in Russia. It is conceivable that the process of engagement and negotiation required for an ANF regime could re-open dialogue, promote progress in other spheres, and lead to further agreements.

b. The Multi-phased Approach

Dr. Amy Sands, formerly a deputy director of the U.S. Arms Control and Disarmament Agency, describes arms control not as an event, but as a process, involving years of tedious work and negotiations.[24] In a similar vein, the ANF regime would not be an event, but a long-term and multi-staged process. Arguably, it would require the establishment of a receptive environment in the highest levels of government, as most politicians are generally unwilling to go forward with unexplored or immature proposals. Therefore, an environment that is built upon long-term and positive interactions between scientists, scholars, and non-governmental organizations, would be likely to yield the basis for higher levels of confidence.

The ANF regime would be divided into several different stages and spread out over a long term implementation span:

Stage One - **Initial Agreement**
1. **Declaration of facilities/cantonment sites**
2. **Declaration of weapons numbers**
3. **Verification Protocol**
4. **Asymmetric Reductions to Equal Numbers**

Stage Two - **Deep Reduction and Elimination Agreement**
1. **Further Deep Reductions to Lower Thresholds**
2. **Category Elimination**

Stage Three - **Linkage to Further Warhead Destruction**

Figure 7.1 The Phased Approach

[24] Interview by the authors with Dr. Amy Sands at the Monterey Institute for International Studies, Center for Non-Proliferation Studies, August 8, 1996. Dr. Sands attributes the tedious nature of this process in part to the immense amount of staying power in government bureaucracies on both sides.

Stage One is designed to facilitate the initial ANF Agreement. Undoubtedly there would be problems on both sides with regard to internationally intrusive inspections because of the sensitivity of the weapons and facilities. There would be questions regarding the exchange of restricted nuclear data. The issue of verification of the starting numbers would be a significant hurdle. Thus Stage One would need to resolve these initial issues and establish the trust and confidence required to implement the ANF regime.

First, the number of cantonment sites would be declared during negotiations. For the United States, one of the principal concerns would be the perspectives of its NATO allies, because the U.S. weapons in Europe would fall under the treaty regime. The United States would need to retain several cantonment sites in NATO Europe. For the Russian Federation, one of the principal concerns would be to retain weapons in places where they could be postured against the troubled strategic areas to the south and south-east.

Second, the numbers of weapons would be declared and the current arsenal would have to be secured. Although this should not be a problem for the United States, many challenges must be anticipated on the Russian side at this stage. The weapons, many of which are not under the most satisfactory security and management programs, must be inventoried, centrally monitored, and stored under unimpeachable security conditions. If one cannot establish a leak-proof system at this point, further effort is not likely to overcome the dangers of nuclear leaks and proliferation, to say nothing of possible cheating. Therefore it is imperative to accomplish this step at an early point.

Third, a Verification Protocol would have to be negotiated. This agreement would cover the following areas: (1) agreement on the types of national technical means (NTM) to be used for verification of the cantonment sites and the weapons and warhead destruction process, (2) an agreed-upon cycle of routine on-site surety inspections at declared cantonment sites, and (3) a system for conducting no-notice challenge inspections.

Finally, the last part of the initial ANF agreement would involve actual weapons reductions. The U.S. and Russian stockpiles would be reduced down to equal numbers at a level slightly lower than the current global U.S. inventory.[25] This anticipates a large, asymmetric Russian drawdown along with a smaller U.S. reduction. Although this is an unbalanced process,

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[25] While the French would be "at the table" from the outset, French reductions would only occur at the end of Stage Two when all Russian weapons would also be eliminated. The French weapons, though not reduced, would be counted together with the U.S. totals against the Russian ceilings. Also, in order to assuage European concerns, initial U.S. reductions could come from weapons deployed in the CONUS and not from the current European-based U.S. NSNF arsenal.

there is ample precedent for this. During the INF treaty implementation, for example, the Soviet Union was required to engage in asymmetrically larger reductions in its deployed missile forces. The remaining weapons would be placed in the declared cantonment sites. Several issues must be accounted for during this stage:

- Once the weapons are moved to their cantonment areas, they must not be co-located with their respective delivery systems. The weapons would be monitored (but not controlled) at their cantonment sites (i.e., while monitoring systems would be installed to confirm treaty compliance, they would not prevent the individual countries from accessing the sites if such access was deemed necessary).
- As the weapons and warheads are reduced and destroyed, the destruction process would be a jointly verified procedure.
- The remaining fissile material would, in the case of HEU, either be diluted and committed to civilian nuclear reactor power programs, or be diluted and permanently disposed of after it has been mixed with other radioactive waste. The plutonium would also be permanently disposed of. These processes would be monitored by an internationally sanctioned agency such as the International Atomic Energy Agency (IAEA).

Whether the ANF regime as a whole could be fully implemented would depend on the level of success in carrying out the initial agreement in Stage One. This initial agreement might contain an obligation to seek a linkage to Stage Two, (e.g., further deep reductions and eventual category elimination, pending verifiable implementation of Stage One).

The initial part of Stage Two would entail further and deeper reductions of the weapons systems in addition to possible reductions in the number of cantonment sites as well. The final removal of U.S. nuclear weapons from Europe would occur during the second part of Stage Two, when all weapons in this category (i.e., all air-delivered nuclear weapons) will be targeted for elimination. During this final phase, France's air-delivered nuclear weapons would also be eliminated along with those of Russia and the United States. In this manner, NATO would retain instruments of U.S. nuclear protection in Europe until all Russian air-delivered nuclear weapons (especially those assigned to the Russian Long Range Bomber divisions which could strike Europe with less warning time) have been withdrawn.

Stage Three might come into being as an extension of the ANF regime. Aside from the nuclear warheads addressed by the ANF regime, thousands of other types of nuclear warheads have been retained under both the START and INF regimes. These weapons could also be targeted for eventual destruction based on the experience gained from implementing the ANF regime.

2. Potential Obstacles

a. Technical Hurdles: Verification, Detection, and Numbers

It would be reasonable to expect a series of challenges and hurdles if this regime were implemented. Three broad questions must be addressed. First, how would the verified elimination of nuclear warheads occur? Second, could the verification process detect nuclear weapons that may be hidden from the agreement? Third, how would the initial base-line number of warheads be determined?

(1) The verified elimination of nuclear warheads.[26] The process of conducting the verified elimination of nuclear warheads would be complex and involved, but not insurmountable. The principal focus of this process is "to verify that warheads specified by [the] treaty for elimination are, in fact, completely dismantled, their components rendered useless for construction of new warheads, and the contained fissile materials placed under international safeguards or disposed of in such a manner as to make them unusable in weapons."[27] In general the process can be described as follows:

> Each nation separates the fissile materials and tritium from the other warhead components. The fissile materials are committed for use as fuel supplements for nonmilitary power reactors or for direct disposal in forms that would not be practical for subsequent recovery for use in weapons. The remaining components are verifiably destroyed. Their material residues, including tritium, may or may not be returned to the owner nation.[28]

The process steps of eliminating warheads must be completely verifiable and need to ensure that (1) all warheads and associated payload hardware identified by the owner country and earmarked for elimination are in fact correctly described; (2) all items earmarked for elimination are destroyed, and (3) none of the nuclear material from the dismantled warheads is diverted to unauthorized uses. "These guarantees must be provided without the need to disclose sensitive information about the design of the warheads or other associated equipment, such as re-entry vehicles, penetration aids, or shielding against radiation."[29]

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[26] The information presented here was obtained from Theodore B. Taylor's article entitled "Verified Elimination of Nuclear Warheads" in Science and Global Security, Vol. 1, 1989, pp. 1-26.
[27] Ibid., p. 1.
[28] Ibid., p. 4. Dr. Taylor's presentation is authoritative and technically detailed. Please see this article for a greater degree of complexity and detail.
[29] Ibid., p. 7.

The process of eliminating the warheads involves several key steps (please refer to Figure 7.2 below):[30]

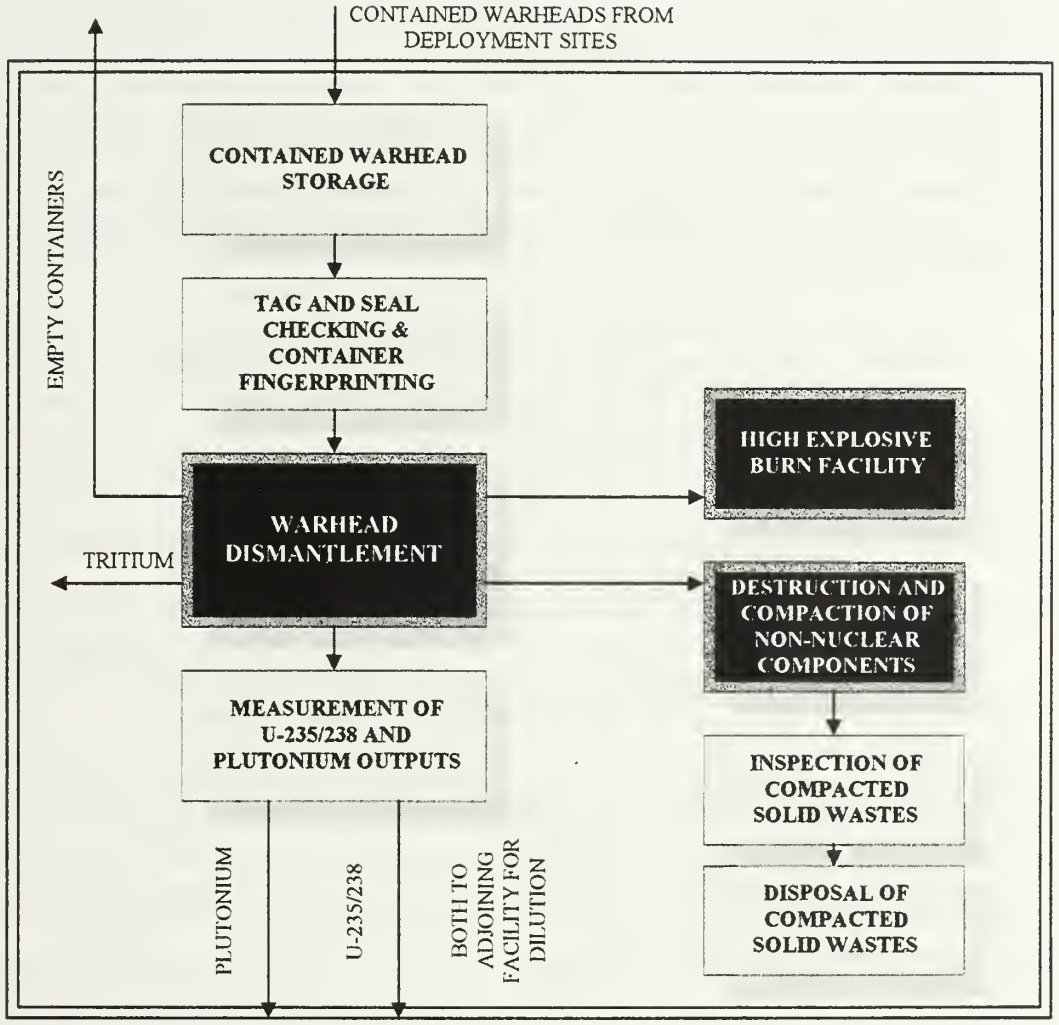

Figure 7.2 Schematic Diagram of a Dismantlement Facility[31]

1. Warheads to be eliminated are placed inside shipping containers at their deployment or storage cites. The transfer of payloads/warheads from delivery vehicles or storage to shipping containers is observed by inspectors (the units may be temporarily covered while being transferred to the shipping containers, to avoid revealing sensitive information). The inspectors then tag, seal, and "fingerprint" each container.[32]

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[30] The following steps have been gleaned from pp. 9-20.

[31] Ibid., p. 14.

[32] 'Fingerprinting' is a key concept related to detection of substitutions. It allows inspectors to ascertain that shipping containers have not been tampered with. There are numerous methods for fingerprinting containers, including microscopic photography, wrapping them with bundles of optical fibers, or using special welds that immediately reveal tampering. Such techniques have routinely been used by the IAEA.

2. The shipping containers are moved to the dismantlement facility where they are examined by the inspectors to ensure that they have not been tampered with. All materials are contained within well-defined boundaries from the time that they are placed in shipping containers at the deployment sites until they have been dismantled. Dismantlement facilities must be previously declared sites so that the appropriate monitoring systems can be installed. The dismantlement facility is surrounded by a well-defined boundary and portals with access through this boundary are all monitored visually and with the appropriate equipment to ensure no passage of unauthorized objects, materials, or people. The main function of the portal-monitoring equipment is to detect unauthorized removals of fissile materials from the facility, or introduction of unauthorized items into the facility.

3. The principal outputs from the facility are the following:
   - Accurately measured quantities of U-235 and U-238 mixtures and plutonium, in metallic forms that do not reveal warhead design features, for secure transfer to an immediately adjoining site for monitored dilution.
   - Tritium, in amounts not to be revealed to inspectors, to be returned to the owner nation or disposed of in a safeguarded manner.
   - Small containers of radioactive materials used for warhead chain reaction initiators or functions other than directly releasing explosive energy.
   - Residues of compaction or incineration of all other components of the warheads or other payload items. The high-explosives can be burned and the other components compacted. The compacted solid wastes are scanned for the presence of fissile materials and then are permanently disposed of.

4. After accurate measurement of the masses and isotopic compositions of the fissile materials by inspectors, the uranium and plutonium would be transferred from the dismantlement facility to an adjoining facility for further processing to prepare them for their ultimate disposal. This process is also monitored by inspectors and the facility would also be enclosed by a containment perimeter. The only place where inspectors would not be physically present is in the dismantlement area. Everything entering and exiting this area is, however, tightly controlled and monitored.

As described and depicted, the process provides several key assurances:

1. All materials in the warheads are contained within well-defined boundaries from the time they are placed in shipping containers at the deployment sites until they have been dismantled.
2. Any attempts to divert any of the warhead components to unauthorized purposes would be detected.
3. All major components of the warheads or other payload items are destroyed.
4. All U-235, U-238, and Pu in the warheads is accounted for in the measured output of these materials from the dismantlement facility.

Please see Dr. Taylor's article "Verified Elimination of Nuclear Warheads" for further information regarding this process.

5. The Substitution of dummy warheads for real ones at the deployment sites, or before dismantlement operations begin, is likely to be detected.[33]

In conclusion, although it is somewhat complex and arduous, the most critical benefit of this process is that warhead dismantlement and elimination are not only verifiable, but can also be designed to be resistant to tampering and cheating. Moreover, if one assumes that the dismantlement facility employs a "full-time work force of 100 direct labor employees, at $100,000 per person-year (including overhead)," the labor costs would amount to $10 million per year. According to experts, "it is therefore unlikely that the total costs of dismantling ... nuclear warheads, and providing the contained fissile materials for use as nuclear fuel or for direct disposal would exceed a few billion dollars."[34]

(2) Detecting Nuclear Warheads.[35] While it is possible to design a system for the verified destruction of nuclear warheads, the ANF treaty regime must also provide for a mechanism to detect behavior that violates the treaty boundaries (e.g., the withholding and hiding of nuclear warheads). This capability is more technologically complex, but is presently being developed in the United States. What follows is a brief summary of the methods currently being designed to provide this capability.

"Fissile materials [HEU and Pu] are radioactive; they are very dense and absorb certain radiation very well; and they can be fissioned. Therefore, there are three basic ways to detect fissile material: 'passive' detection of the radiation emitted by its radioactive decay, or 'active' detection involving either radio-graphing ('x-raying') an object to detect dense and absorbing materials or irradiating an object with neutrons or high-energy photons and detecting the particles emitted by the resulting induced fissions."[36] The wide-area nuclear detector (WAND) concept, under development at Lawrence Livermore National Laboratory, incorporates multiple such detectors in a sensor network, and can provide detection, characterization, and monitoring/tracking of nuclear-weapon material for treaty verification.[37] Essentially, WAND incorporates a series of systems (ground and space-based) that provide for "continuous monitoring of nuclear-material diversion attempts." Most significantly, WAND does not employ intrusive

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[33] Ibid., pp. 8-9.
[34] Ibid., p. 22.
[35] The information contained in this section is taken from the following two sources: Fetter, Steve et al. "Detecting Nuclear Warheads," in Science and Global Security, Vol. 1, 1990, pp. 225-302, and Koenig, Zachary et al. "Wide-area nuclear detection for monitoring and tracking nuclear-weapon material" in Arms Control and Nonproliferation Technologies, Third Quarter 1994, pp. 27-28.
[36] Fetter et al, "Detecting Nuclear Warheads," p. 226.
[37] Zachary Koenig et al, "Wide-area nuclear detection for monitoring and tracking nuclear-weapon material," p. 27.

monitoring of only known and declared facilities—instead, "it provides comprehensive oversight of all facilities in the monitored area, *even unknown sites* [italics added].[38] According to an expert familiar with the system's capabilities, this "feature significantly mitigates the material source term initialization problem—the inability to confidently know the initial location of all material subject to monitoring [i.e., the inability to know all the possible locations for treaty violations]."[39] WAND will incorporate "an easily deployed array of fixed sensors that can be supplemented with moving sensors that can be tailored to a specific need. By correlating the output of many sensors, the WAND system is capable of achieving much higher probability of detection and lower false alarm rates than are obtainable with individual sensors."[40]

Thus WAND provides comprehensive oversight by detecting the presence and movement of nuclear-weapon materials without on-site presence—it is non-intrusive and does not require access to facilities. In other words, the capability to detect and locate the presence of materials that violate an ANF treaty regime is currently being developed by the national laboratories. This, along with other measures, should reduce the incentives to cheat and evade the treaty boundaries, and allow for the creation of a robust and comprehensive verification regime.

(3) The Original Base-Line Warhead Number. One of the most basic potential obstacles within the ANF regime is the question of how many warheads each side really has. While at first this seems to be quite a significant challenge, in reality it may not be an insurmountable problem. Both sides would declare the base-line numbers early in Stage One. Essentially, the inventories of weapons should be mutually declared and transparent. Following this exchange, the regime would incorporate a base-line inspection timeline, during which all parties could arrange for standard confidence inspections according to agreed-upon protocols. At the conclusion of Stage One all cantonment facilities must be declared and all warheads be located within these facilities. Therefore, any warheads outside of these boundaries would be in violation of the treaty regime. At this point, each party could initiate a series of challenge inspections, during which time all suspect sites would be subject to an on-site review within 24 hours of the announced request. In addition to this procedure, each party would be able to rely on national technical means (such as wide-area nuclear detection systems) in order to further enhance

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[38] Ibid., p. 27.
[39] Ibid., p. 27.
[40] Ibid, p. 27.

confidence in the reliability of the regime. Therefore, under the circumstances, it would be fairly difficult to successfully evade the treaty boundaries.

b. Political Challenges: France

Although the ANF regime would deal primarily with U.S. and Russian air-delivered nuclear weapons, France's non-participation would leave it as the sole state possessing these weapons in Europe. The Russian Federation would therefore probably not agree to the regime unless French air-delivered nuclear weapons were incorporated.

The French approach to arms control has traditionally reflected the importance of nuclear weapons as France's ultimate security guarantee "in an uncertain and unstable world and [as] a guarantee of France's political and strategic autonomy."[41] President Chirac reaffirmed his confidence in France's current posture in September 1995 when he stated, "Our present force is enough of a deterrent, it's in sufficient working order to take us up to the year 2010..."[42] Historically France has declined to participate in nuclear disarmament negotiations such as SALT and START by arguing that these efforts should be pursued first by the superpowers. In 1983 François Mitterrand specified three requirements that must be satisfied before France could consider playing a role in such efforts:

- The reduction of the superpower nuclear arsenals to levels much closer to those of other nuclear powers.
- Limitations on defensive systems capable of neutralizing offensive deterrent forces (such as antimissile, antisubmarine, and antisatellite weaponry).
- Significant progress in the reduction of the conventional force imbalances in Europe and the global elimination of chemical and biological weapons.[43]

Historically both France and the United States have rejected attempts by Moscow to count French nuclear weapons with U.S. totals (in the SALT and INF negotiations, for example).

More recently, French experts have indicated that France does not expect to engage in nuclear arms control efforts (other than NPT- and CTBT-related deliberations and the fissile material cutoff discussions) in the foreseeable future due to enduring differences in the force levels of France, the United States, and Russia.[44] However, in his comments on the 1994 French

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[41] David Yost. "Nuclear Debates in France," p. 129.

[42] Text of televised interview provided by the French Embassy, Washington D.C. Jacques Chirac. "Interview with M. Jacques Chirac," 7 Sur 7, TF1, 18 September 1995, p. 9.

[43] Francois Mitterand cited in David S. Yost, "France," chapter from Douglas J. Murray and Paul R. Viotti, eds., The Defense Policies of Nations: A Comparative Study, third edition (Baltimore and London: The Johns Hopkins University Press, 1994), p. 266.

[44] Based on interviews by the authors with several French nuclear policy experts conducted from February through June 1996.

Defense White Paper, Prime Minister Edouard Balladur acknowledged that the country's nuclear deterrent should be "constantly adapted to the evolution of threats."[45] Recent unilateral cuts in France's nuclear forces (see Chapter 4) reflect, among other things, the reduction in the threat as well as the impact of fiscal constraints.

Despite these policies, France might consider participating in the ANF regime if the French believed their security would be enhanced by the elimination of a class of Russian nuclear weapons postured primarily against Europe. The reduction of U.S. and Russian nuclear arsenals would help to redress long-standing French concerns regarding numerical imbalances. Additionally, the opportunity to reduce the defense budget might be welcomed in these times of fiscal austerity. Finally, the regime might be attractive to French political elites since it would promise France a genuine "seat at the table" on a par with the United States and Russia regarding a high-profile security issue. Notwithstanding these considerations, it seems likely that France would only participate if it believed that the ANF regime served France's vital national security interests.

c. Legal Obstacles: The START Treaties

START I and II provide for different sets of constraints on heavy bombers and air-delivered nuclear weapons.[46] Under START I counting rules, each heavy bomber equipped to carry only short-range nuclear missiles or gravity bombs counts as one warhead (this applies to the B-1B Lancer and B-2 Spirit). U.S. heavy bombers equipped to carry long-range nuclear air-launched cruise missiles (ALCMs) each count as 10 warheads although they may actually be equipped for up to 20 long-range ALCMs. These restrictions are limited to the B-52 Stratofortress (G and H models) and apply to the first 150 bombers, after which the number of attributable warheads will be the number of long-range ALCMs for which the bombers are actually equipped. Furthermore, 75 heavy bombers equipped for non-nuclear arms are exempted from the START I treaty limits.

The START II treaty, which was ratified by the U.S. Senate in January 1996 (but has not yet been ratified by the Russian Duma), places additional restrictions on the numbers, roles, and basing of U.S. and Russian heavy bombers. Specifically, Article IV contains the following stipulations:

1. Regarding counting rules, the treaty requires that the number of nuclear weapons counted on each heavy bomber be equal to the actual number that

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[45] France. Ministry of Defense. Defense White Paper. 1994.

[46] The following information on START I is taken from "START: Basic Provisions of the Treaty," WEB Edition, Arms Control and Disarmament Agency, 21 May 1996.

the aircraft can carry (nuclear weapons include long-range nuclear ALCMs, nuclear air-to-surface missiles with a range of less than 600 kilometers, and nuclear bombs).

2. Heavy bombers reoriented to a conventional role:
    - may not exceed 100 at any one time;
    - will be based separately from heavy bombers with nuclear roles;
    - must have observable differences that are visible during inspections and observable by national technical means; and
    - may not have nuclear armaments stored within 100 kilometers of their basing sites.
3. Heavy bombers reoriented to a conventional role will still remain subject to all provisions of the treaty, including inspections.
4. If there are aircraft of one type assigned to both nuclear and conventional missions (e.g., the USAF B-52), then one aircraft of each mission category must be continuously exhibited to allow for differentiation between categories.[47]

The ANF regime would significantly modify these constraints while retaining all other elements of the START treaties. Currently, the U.S. Air Force is forced to hold its B-2 force in reserve for the nuclear missions and is therefore unable to take full advantage of the aircraft's conventional capabilities. In addition, as the B-52 fleet continues to grow older and a significant number are also held in reserve for nuclear roles, fewer aircraft are available for conventional scenarios (e.g., Desert Storm). Essentially, the ANF Regime would allow the USAF to release these aircraft from their nuclear taskings because the ANF regime would ultimately supersede all START restrictions on heavy bombers, freeing these delivery systems for conventional missions.

Finally, it should be noted that the 1994 Nuclear Posture Review concluded that 20 B-2s and 66 B-52s assigned to nuclear missions would serve as the heavy bomber leg of the nuclear triad for the foreseeable future. The nuclear warheads assigned to these aircraft would eventually be eliminated under an ANF regime, thus confiding the mission of strategic deterrence to ICBMs and SLBMs. The ANF regime would not affect START ceilings on ICBMs and SLBMs. However, it might change the composition of the strategic nuclear force since the warhead numbers initially reserved for air-delivered nuclear weapons would no longer count against the accountable warhead ceilings. The changes to the strategic triad (i.e., the removal of the bomber leg) would require extensive deliberations involving numerous government agencies and the executive and legislative branches. While the outcome of such a process cannot be forecast, it represents a significant potential obstacle to the realization of an ANF regime.

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[47] START II: Treaty Between the United States of America and the Russian Federation on Further Reductions and Limitations of Strategic Arms, The Nuclear Roundtable (Background Document), Internet Edition, The Henry Stimson Center.

d. Russian Motives and the 1991 Initiative

Many officials and experts would question whether the Russian Federation would ever be a willing participant in an ANF regime. For example, a July 1996 report states that "under the conditions of economic crisis and its fairly modest capabilities to equip the army and navy with new weapons, Russia will have to rely on nuclear weapons to safeguard its security in the foreseeable future... Because of Russia's geostrategic position, tactical nuclear weapons are of much greater military-political significance to Russia than to the United States.... That is why Russia can hardly expect the composition of its tactical nuclear weapons to be symmetrical with the U.S. composition."[48] Given Russia's current conventional weakness and corresponding reliance on nuclear weapons for its security, it is likely that Russia would have to be adroitly persuaded to participate in such a regime. Furthermore, Russia would have to accept large and asymmetric reductions in its nuclear forces. Russian officials may seek tradeoffs in other areas—e.g., NATO enlargement, economic benefits, cutbacks in U.S. SLBMs and SLCMs, or an adjustment or change to CFE or START II. In addressing these issues, the following should be considered. First, there are historical precedents for asymmetric weapons reductions (e.g., the INF and CFE treaties). Second, as stated elsewhere in this thesis, the ANF regime should not be offered to Russia as a bargaining chip in conjunction with NATO enlargement (the regime could proceed in a "separate but parallel" mode). Third, NATO and the United States should insist that the ANF regime (including its focus on warhead reduction and elimination) be implemented as a testbed agreement before any other arms control treaties are modified.

While these are all potential complications, some experts might be surprised to learn that the USSR came close to proposing an arms control treaty regulating, among other systems, air-delivered nuclear weapons in late 1990 and early 1991.[49] In fact, according to Dr. Nikolai Sokov, the only reason that the initiative was not pursued was that President Bush's 1991 unilateral initiative pre-empted the Soviet proposal. The Soviet concept, devised by members of the Foreign Ministry's Department of Arms Control and Disarmament and agreed to by the General Staff, advocated a "leap forward" toward the reduction of warheads instead of delivery systems. The first stage of the proposal involved asymmetric Soviet reductions down to an equal level below the level of either side at the time. Following stages were designed to further reduce, and eventually eliminate, all theater weapons. The proposal envisioned concentrating the

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[48] "Ratifikatsiya Dogovora SNV-2: Resheniya, Problemy, Perspectivy," Special Supplement to OBOZREVATEL-OBSERVER, 19 July 1996.

[49] The following information was obtained from an interview notes with Dr. Nikolai Sokov on August 16, 1996.

warheads at designated facilities with portal and perimeter monitoring systems as well as on-site inspectors. In order to increase confidence in the proposal, both base-line and challenge inspections were incorporated. The warheads were to be destroyed at jointly-monitored facilities. While foreign inspectors would not have been allowed to observe actual warhead dismantling, all fissile materials were to be accounted for and all other components were to be destroyed in the presence of inspectors. The Soviet proposal suggested several layers of intrusive and non-intrusive inspection and detection systems that would ensure that a warhead would be detected even if it was initially missed or not accounted for. The projected Soviet initiative envisaged the eventual establishment of a nuclear-free zone in the center of Europe and over 1,000 km wide (stretching roughly from the Atlantic to the Urals). In other words, the Soviet proposal would have denuclearized all of Europe, including the European USSR. This zone would have "prevented" the use of tactical nuclear weapons in the case of an armed conflict.

While the work invested in this proposal appears to have been genuine, several key concepts should be noted:

- First, theater weapons were defined to include all ground-based systems (such as nuclear artillery, land mines, etc.) as well as all theater aviation assets. Significantly, however, the projected Soviet proposal did not include Long Range Aviation assets, and thereby preserved the USSR's ability to strike at Central and Western Europe, even from beyond the Urals. (One of the key differences between the Soviet proposal and the ANF regime is that the ANF regime would limit *all* air-delivered nuclear weapons).
- Second, it is critical to note that the projected Soviet proposal, if carried out, would have achieved a long-time objective of Soviet policy, namely the removal of U.S. nuclear weapons from Europe. Simultaneously, it would have preserved the Soviet capability to use LRA forces against NATO Europe.
- Third, surprisingly, the projected Soviet proposal did not seem to address British and French nuclear forces. This is not likely to be the case in any future regimes. Although the British will no longer deploy air-delivered weapons by 1998, the French plan to retain this capability for the foreseeable future.

The proposal nonetheless provided for an unusual level of transparency, and the Foreign Ministry was prepared to make a formal approach. Indeed, according to Dr. Sokov, the negotiating teams had already been assembled and the personnel assignments completed. Although the motives for such a proposal also involved the removal of NATO's European-based U.S. nuclear deterrent forces, the terms of the proposal suggest openness to an exceptional degree of transparency among Russian policy makers. The fact that the proposal advocated the

limitation, reduction, and verified destruction of nuclear warheads is surprising, given the normally secretive and closed nature of the Soviet and Russian governments.

D. FORCE CHARACTERISTICS OF THE ANF REGIME

The ANF Regime would, over time, reduce the presence of U.S. nuclear weapons in Europe to zero. It would consequently also reduce the number of countries that have agreed to host U.S. nuclear weapons on their territory to zero. However, NATO nuclear consultation arrangements would not necessarily be emasculated. As argued elsewhere in this study, Alliance nuclear coordination may not necessarily be contingent on the physical presence of U.S. nuclear weapons in Europe.

While the United States would no longer deploy nuclear weapons in Europe, individual member states (the United States, Britain, and France) would continue to provide the core forces and infrastructure of NATO's nuclear posture. The strategic nuclear forces of the United States would also continue to be linked to the ultimate defense of Europe—they would remain the supreme Article 5 guarantee for the Atlantic Alliance. While reconstitution might or might not be a complementary policy (this option is explored in greater detail in Scenario #2), the level of military readiness and flexibility (in terms of conducting operations in Europe) would decrease. However, the elimination of these weapons would not completely undermine the ability of the United States to posture a nuclear response below the strategic level. The United States would at a minimum retain the capability to reconstitute its nuclear-tipped TLAM-N cruise missiles. Figure 7.3 represents a summary of the force characteristics of the ANF regime.

Nuclear Force Characteristics: Scenario #4 The ANF Regime	# of US Weapons in Europe	Decreasing to Zero
	NATO Nuclear Consultation	YES
	NATO-Wide Capability	No
	US Article 5 Strategic Linkage	YES
	# of US Weapons Basing Countries	Decreasing to Zero
	Level of Military Readiness	Less
	Level of Military Flexibility	Less

Figure 7.3 Force Characteristics

E. ANALYSIS AND CONCLUSION: THE ANF REGIME AND EUROPEAN STABILITY

The present global alignment of nuclear weapons between East and West is increasingly being supplanted by a new multi-polar dynamic. The uncertainty of this dynamic does not allow for an immediate reduction and withdrawal of all U.S. nuclear weapons in Europe. In the words of Laurence Martin, "...even in Europe this is not the time to dismantle deterrence. Rather it is an opportunity to adjust it; make it less expensive, oppressive and intrusive; and retain it as the latent source of stability within which the NATO powers can recast their relationships and Europe as a whole build a new, continental order."[50] While U.S. NSNF still have a role in Europe today, their perceived value and utility are gradually fading, at least in the eyes of some observers. In fact, their final utility may be their role as a bargaining chip to induce the Russian Federation to eliminate entirely this category of weapons. It is in the security interests of the democracies of Europe and North America to contain the pernicious and destabilizing nuclear problems in the Russian Federation today.

1. Deterrence and Politics

How would the ANF Regime affect the health of nuclear deterrence for the United States and its NATO allies? One can certainly argue that the perceived value or validity of nuclear deterrence has been eroding since the collapse of the bipolar world order, both as a doctrine as well as a publicly articulated policy. The elimination of a major category of nuclear weapons in conjunction with the gradual withdrawal of remaining U.S. nuclear forces in Europe would be consistent with this trend. The INF treaty and its zero-zero provisions are proof that NATO governments are capable of continuing to assert that their deterrent posture remains credible, even though the most capable European-based NATO nuclear weapons (those mounted on Pershing II and GLCM missiles) were completely eliminated.

Assessing the likelihood of a U.S. nuclear response in the defense of its Allies should not be based on individual weapons systems, but rather on the stakes for U.S. vital interests in maintaining and honoring Alliance commitments in Europe. The argument is not a new one; it has been discussed repeatedly since 1957, when Sputnik dramatized America's vulnerability to prompt Soviet nuclear retaliation in the event of U.S. employment of nuclear weapons in defense of its allies. For the remainder of the Cold War, the United States labored to assure its Allies that,

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[50] Laurence Martin, "Dismantling Deterrence?" Review of International Studies, Vol. 17, 1991, p. 224.

vulnerability notwithstanding, the U.S. commitments to NATO Europe stood firm. Fortunately, the debate between vulnerabilities and enduring interests was never put to the test of nuclear war.

The ANF Regime's impact on Alliance cohesion is difficult to predict. It seems reasonable to assert that the formula describing U.S. nuclear weapons as "the glue that binds the Alliance together" could erode along with the perceived credibility of nuclear deterrence. In other words, the value assigned to nuclear weapons as instruments for the preservation of Alliance cohesion may be over-emphasized. Therefore, depending in part on the circumstances and associated Alliance policies, a gradual withdrawal of U.S. nuclear weapons might not undermine Alliance cohesion. As Karl-Heinz Kamp and others have argued in the past, one possible result of such a withdrawal is that NATO would simply redefine its requirements for nuclear deterrence and thus preserve Alliance cohesion. Observers familiar with NATO nuclear planning indicate that such a withdrawal could be combined with a restructuring of the NATO nuclear consultation process that would link European security more clearly with U.S. strategic nuclear forces. Intensified nuclear planning with nuclear and non-nuclear allies could be part of this process.

2. Strategic Concerns

There can be little doubt that the ANF Regime would curtail Russian air-delivered nuclear threats in the Eurasian area. While this regime neither recommends nor endorses the complete renunciation of nuclear deterrence, it does seek to promote a raising of the nuclear threshold and the containment of the threat of "loose" Russian nuclear weapons and fissile materials. In fact, the threat of Russian WMD probably does not reside in deliberately planned employment against NATO countries, as was the case during the Cold War. Rather, today's threat emanates from either (1) the loss of control over nuclear weapons systems or (2) the commitment of nuclear weapons in what is perceived to be a desperate situation in a conflict on Russia's periphery. Furthermore, the lack of modern permissive action links on these systems makes their control even more questionable. As Igor Khripunov explains, Russia's reliance on nuclear weapons with inadequate permissive action links increases "the likelihood of unauthorized or accidental launchings, as well as misinterpretations and disruptions in communications."[51]

The issue of whether the ANF regime would mitigate "new" WMD threats is less clear. Some might argue that lower numbers of U.S. nuclear forces would entice others to play "catch up" with the United States and NATO in an effort to gain equal power and prestige. However, as Ivo Daalder points out, few countries could actually marshal the resources necessary to build up a

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[51] Khripunov. "Russia's Dangerous Weakness," p. 43.

nuclear force strong enough to challenge the nuclear posture of the United States. The United States and its NATO allies will in the foreseeable future have the ability to stay ahead of the few proliferants who may attempt this.[52] In any event, the perceived value for proliferants of possessing nuclear weapons and threatening their use, even with only one or two weapons, negates the parity argument. The parity notion was valid during the Cold War when NATO faced a multi-dimensional nuclear threat from the Soviet Union. After the late 1960s, U.S.-Soviet nuclear parity was viewed as stabilizing because it undermined the incentives that higher numbers of weapons provided for a pre-emptive nuclear strike. Proliferants do not require nor aim for strategic parity. The possession of merely one or two weapons might, in some circumstances, credibly threaten NATO and the United States because of what is believed to be the completely different cost-benefit calculus of some proliferants. Thus, the ANF regime would probably not lessen the possibility of proliferant WMD threats.

3. WMD Proliferation

Regarding external WMD proliferation, "a deliberate strategy to cut nuclear force levels can help to reduce the perception that nuclear weapons endow their possessors with power, prestige, and international stature—a perception that in itself contributes to proliferation."[53] As Daalder argues, "is it really in the U.S. interest to advertise the centrality of nuclear weapons to power in international affairs at a time when countries like ... Japan and Brazil aspire to a greater role in, and responsibility for, preserving international security? Surely the United States has much to gain and very little to lose in arguing the opposite—that power and responsibility reside in the political and economic well-being of nations rather than in their nuclear status."[54] Thus the perceived de-emphasis of nuclear weapons in the international sphere might provide an impetus for non-proliferation. On the other hand, proliferant states are not likely to define their national security strategies based simply on an ANF regime, and it is likely that they may find other factors more compelling—e.g., their own ambitions and perceived security needs. The drive to acquire nuclear weapons is not likely to decrease simply because the major powers have reduced their own nuclear weapons arsenals. Instead, the likelihood for nuclear proliferation will probably be driven by each state's specific security concerns.

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[52] Ivo Daalder, "What Vision for the Nuclear Future?" in Lexis-Nexis (The Washington Quarterly, Center for Strategic and International Studies and the Massachusetts Institute of Technology), Spring 1995.
[53] Ibid.
[54] Ibid. In order to address those countries determined to proliferate, the U.S. and its allies must erect a robust and effective counter-proliferation policy. This includes preserving nuclear weapons delivery options (e.g. TLAM-N).

The answer to the question of whether the ANF regime would affect internal proliferation rests upon a discussion of the robustness of both extended deterrence and enduring American national security interests in Europe. The debate regarding the health of extended deterrence has historically been characterized by two general perspectives: "one maintained that extended deterrence faced a perennial crisis and therefore constantly questioned the existence of coupling. This view focused exclusively on the balance of relative vulnerabilities between East and West and was principally concerned about the credibility of particular extended deterrence strategies. In contrast, the second perspective contended that extended deterrence was fundamentally robust and thus accepted the extistence of coupling as a matter of course."[55]

The first perspective was concentrated around the vulnerabilities argument. As Secretary of State Henry Kissinger stated in 1979, "our European allies should not keep asking us to multiply strategic assurances that we cannot possibly mean or if we do mean, we should not want to execute because if we execute, we risk the destruction of civilization."[56] Similarly, Ivo Daalder writes that "to the extent that it existed, the allied doubt about the credibility of the U.S. nuclear guarantee never derived from a fear of the insufficiency of U.S. force levels and capabilities, but rather, as Charles de Gaulle was fond of reminding his fellow Europeans, from the fact that the United States was vulnerable to nuclear attack or retaliation...." In order to overcome the perceived crisis in extended deterrence, Europeans tended to encourage strategies that favored nuclear escalation in case of war in order to avoid nuclear abandonment by the United States. Yet, as Daalder writes, "this preference raised the possibility of nuclear entrapment for Americans. In response to the fear of nuclear entrapment, Americans favored strategies that offered the prospect for limiting escalation, which in turn raised European fears of nuclear abandonment."[57] The abandonment-entrapment dynamics and vulnerabilities arguments are familiar to the first perspective on the health of extended deterrence.

On the other hand, those who believed in the robustness of extended deterrence and coupling reasoned that "since the Soviet Union [was] geographically inseparable from Western Europe, ensuring that the United States would be part of a conflict in Europe was... the sine qua non of stability. Hence, from this perspective, the U.S. commitment to the defense of Europe was more important than the credibility of particular deterrent threats to ensure the achievement of NATO's objectives.... [Furthermore,] the U.S. commitment to Western Europe rested in part on a

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[55] Ivo H. Daalder. The Nature and Practice of Flexible Response, pp. 3-4.
[56] Henry Kissinger cited ibid, p. 5.
[57] Ibid., p. 7.

sense of shared political and economic values and in part on the belief that the Atlantic Alliance furthered American national security interests, including containment of a threat to these shared values."[58] The stationing of American military personnel and nuclear weapons in Europe represented the U.S. commitment and assured that stability would be maintained.

If one accepts that the second perspective on extended deterrence is valid, and that the U.S. membership in the Atlantic Alliance continues to further American national security interests, then deterrence should remain robust under the terms of the ANF regime. "This would be true even if the U.S. nuclear force levels continue to decline to still lower levels, provided that the nuclear capabilities potentially threatening to the allies (especially Russian) did so as well."[59] The ANF regime would require first an asymmetric reduction, and then an equal and verified elimination of this category of weapons. If one accepts that nuclear weapons acquisition is driven primarily by a country's security concerns, then the ANF regime should lessen these concerns by introducing transparency, and by reducing and then eliminating this category of nuclear weapons. Unlike other arms control regimes, which have preserved Russia's ability to rapidly strike Western Europe with air-delivered nuclear weapons, this regime would reduce and ultimately eliminate this capability and would leave Russia with strategic systems (ICBMs and SLBMs) and short-range tactical nuclear weapons to target Europe.[60]

The basic strategic stability between the United States and Russia (inherent in START I and II), as well as ongoing commitments by the United States to provide a nuclear umbrella for its NATO Allies and to further its political and economic interests throughout Europe would contain the risk of the Russians using variable-range ICBMs or SLBMs (or short-range tactical nuclear weapons) against NATO Europe. Nonetheless, one can anticipate that some European analysts and policy makers might prefer to retain a U.S. nuclear presence in Europe, even if the successful implementation of an ANF regime would eliminate all Russian air-delivered systems. This political factor would have to be addressed by the Alliance in pursuing an ANF regime.

In order to guarantee the long-term future security of the European area, NATO must be willing to change. The collapse of the Communist regime in Russia has changed the nuclear dynamic in that state. What used to be a tightly controlled and strictly enforced nuclear archipelago is now a system under great strain, in which some Russians advocate greater

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[58] Ibid., pp. 8-9.
[59] Ibid.
[60] Russia would retain the capability to regenerate nuclear artillery, short-range missiles, etc. However, the assumption is that an air-delivered nuclear weapon can be employed in a much more rapid and potent fashion than, for example, an artillery shell or short-range missile—unless, of course, the weapons target is immediately adjacent to its deployment site.

operational reliance on nuclear weapons. As Graham Allison indicates, the dimensions of this threat will be perfectly clear the day after a catastrophe results from premature Russian nuclear employment or Russian nuclear leakage.[61]

Experts and officials alike believe that the chances of an intercontinental nuclear exchange are remote. However, the very weapons which all parties have sought to exclude from any mutually secured obligations are the same weapons that (1) perhaps are the most likely to be used by the Russian Federation in a conflict, and (2) are probably the most unsecure and mismanaged and, therefore, likely to be the source of proliferation and leakage problems. A long-term ANF agreement would address these problems and simultaneously establish multiple fora for transparency and constructive engagement in the future. As Ivo Daalder points out, there are many good reasons why the United States should move toward a smaller nuclear force posture. "Although a residual need for deterrence will remain," he explains, "the thrust of U.S. policy toward nuclear weapons should now be to reduce the likelihood that nuclear weapons will ever be used." This means reducing nuclear weapons in general, and "in particular, Russian nuclear weapons."[62] (Figure 7.4 below summarizes the analysis.)

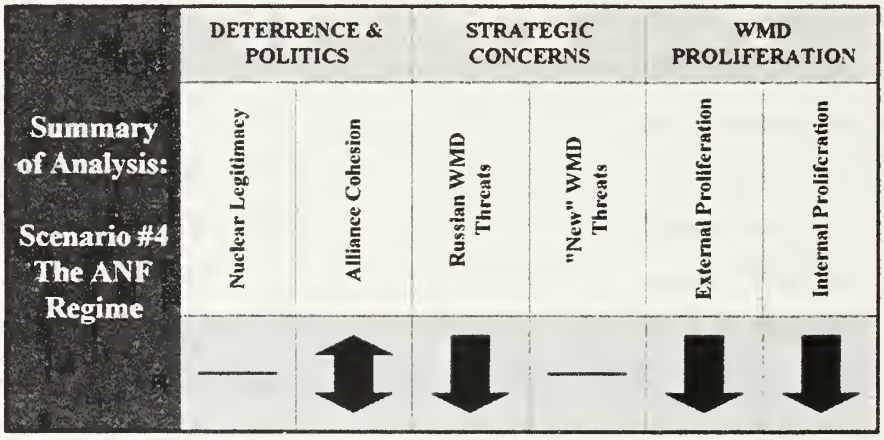

Figure 7.4 Summary of Analysis

F. KEY FINDINGS

- **U.S. arms control efforts suffer from a deep-seated bias oriented toward concentrating on strategic, counter-force systems—those with the most effective security arrangements. Efforts to address dangerous and destabilizing air-delivered weapons and warheads through negotiated arms control regimes have**

[61] Allison et al, Avoiding Nuclear Anarchy, p. 176.
[62] Ivo H. Daalder, "What Vision for the Nuclear Future"

been persistently neglected, except for the SALT and START restrictions on strategic bombers and associated nuclear *delivery* means.

- **Although unprecedented and revolutionary, the proposed ANF regime would be verifiable and practicable. It would use arms control measures to increase security, transparency, and confidence in the Eurasian area.**

- **The ANF regime would not be pursued in order to offer Russia an incentive to accept NATO enlargement. The implementation formula would be "separate but parallel."**

- **The ANF regime could**
  - **increase NATO's security**
  - **raise the nuclear threshold**
  - **counter Russian interests in a nuclear warfighting doctrine**
  - **promote a process of verified and monitored nuclear warhead reduction and elimination.**
  - **ensure that the remaining fissile material is not recycled into further weapons production.**

VIII. CONCLUSION

A. RESEARCH SUMMARY

For over 40 years following the creation of the Atlantic Alliance, the United States and its Allies relied on nuclear weapons, among other capabilities, to deter the Soviet Union from undertaking aggression or coercion. Although there were many debates within the Alliance, the NATO Allies usually managed to present a united front to the Soviet Union. This was possible, in no small measure, because of laborious efforts by U.S. policy makers to cultivate European trust in the American commitment to Western European security. When the Soviet Union collapsed, this network of Cold War relationships suddenly lost much of its original purpose. The threat—and its singular ability to unify 16 contentious Western democracies—receded, thereby reopening the debate about American interests in Europe. Today, European and American policy makers find it increasingly difficult to articulate the need for U.S. nuclear weapons in Europe. Instead, while elites on both sides of the Atlantic generally support Alliance nuclear policies, they have attempted to avoid provoking nuclear weapons debates at the mass public level, partly out of fear that publicity could lead to a withdrawal of these systems, cause a confrontation with Russia, or add to the difficulties already present on the security agenda.

Except for issue areas such as nonproliferation, nuclear testing negotiations, and cooperative threat reduction (that is, programs regarding safety, security, and dismantlement in the former USSR), nuclear weapons have been given relatively little attention *within* the Atlantic Alliance since the end of the Cold War. NATO policy-making staffs have been sharply reduced, some positions have been (or may be) down-graded, and the corporate knowledge base on nuclear issues is shrinking. Nevertheless, issues such as NATO enlargement, the SSMP regime, "no first use," or a "nuclear surprise" may place significant demands on NATO's nuclear experts and policy-makers.

This work has examined four potential scenarios for the future of U.S. nuclear weapons in Europe and has evaluated their potential effects on the stability of the Eurasian area. The first scenario is a continuation of the Status Quo. Given the uncertainties associated with the U.S. stockpile, NATO's nuclear declaratory doctrine and force posture, the on-going delegitimization of nuclear weapons in Western societies, and the impending NATO enlargement debates, the sustainability of the current nuclear force posture cannot be taken for granted.

Furthermore, a domino effect, starting with a "nuclear surprise" (e.g., an accident or an actual employment of nuclear weapons, perhaps in a region distant from Europe), could lead to

mass protests and end with a loss of political support for the retention of U.S. nuclear weapons in Europe. This possible dynamic is explored in the second scenario, a Unilateral Withdrawal. Thinking about how NATO might deal with a unilateral withdrawal is more sensible than simply hoping it will not occur. One result of such a withdrawal might be the third scenario, a West European Nuclear Identity (WNI). The analysis explores possible WNI institutions and membership options, and the forces that might be available to a WNI.

The fourth scenario, an Air-delivered Nuclear Forces Regime, examines a more innovative approach to the future of U.S. nuclear weapons in Europe. An ANF Regime would attempt to mitigate the threats associated with the Russian air-delivered nuclear weapons and could significantly enhance Eurasian security.

B. SUMMARY OF KEY FINDINGS

Russian Nuclear Weapons

- Nuclear weapons are likely to play an increasing role in the rhetoric, operational capabilities, and doctrine of Russian military power.

- Russian nuclear weapons pose a threat to NATO and the United States due to
    - the risk of premature weapons release by Russian commanders during times of tension (as a result of pre-delegation of nuclear launch codes and authority)
    - the Russian doctrinal emphasis on lowering the nuclear threshold to the tactical, theater, war-fighting level
    - the risk of a crisis in the Russian nuclear infrastructure as a result of :
        - overwhelming stockpile stewardship demands
        - the lack of adequate weapons storage facilities and security measures
        - the risk of theft or sabotage directed against Russian tactical nuclear weapons by terrorists, arms traffickers, or proliferants.

WMD Proliferation

- Nuclear declaratory doctrine seems unlikely to deter the acquisition of WMD by states with interests inimical to the United States and NATO.

- Nuclear declaratory doctrine may, however, play a role in deterring WMD employment by adversarial states or actors.

- The receding role of nuclear weapons in Alliance doctrine and policy, combined with NATO's clear preference for conventional military power, is

fostering doubt as to the willingness of the Alliance to posture and employ nuclear weapons.

Nuclear Perceptions in the Atlantic Alliance

- NATO's current nuclear posture is supported by many officials in the major NATO European countries. However, NATO's nuclear weapons no longer command the same degree of public and official attention that they did during the Cold War.

- NATO members are concerned about any further erosion of U.S. nuclear guarantees. They would probably be alarmed by the removal of U.S. NSNFs without credible alternative assurances.

- Among the NATO countries most directly exposed to WMD proliferation in the southern region, support for NATO's nuclear posture is high, but not uniformly so.

- In Greece and Italy support for NATO's nuclear posture serves genuine—though not necessarily pressing—national security purposes. Additionally, in both countries, to some extent, participation in Alliance nuclear affairs is seen as a means of enhancing the national image as a "good ally."

- In Turkey, NATO's nuclear posture is considered an absolutely essential aspect of national security.

- In light of Turkey's security motivations for nuclear protection and the lack of EU or WEU "fall-back" positions, if it perceives itself to be unprotected, there is a substantial chance that it will consider pursuit of a national nuclear program.

The Status Quo: Scenario #1

- The future reliability, safety, and credibility of the U.S. nuclear stockpile is uncertain, as a result of several factors:
    - the unproven viability of the SSMP regime
    - current and long-term inefficiencies and gaps in DOE's stockpile surveillance program
    - the persistent failure to commit to a national tritium production source
    - DOE's inability to adequately fabricate plutonium components
    - the substantial budgetary shortfall for the SSMP and stockpile surveillance programs, as a consequence of the current Administration's budgetary priorities toward DOE

- The vagueness of NATO's current nuclear declaratory doctrine is likely to influence the long-term political and military viability of NATO's nuclear deterrent.

- Although not necessarily credible with most politicians and policy elites, no-first use proposals and nuclear weapons delegitimization efforts are increasingly capturing the public spot light.

- Impending debates regarding nuclear weapons in light of NATO enlargement are likely to call attention to NATO's nuclear forces in the future.

A Unilateral Withdrawal: Scenario #2

- Public reactions following an accident or conflict involving nuclear weapons would be unpredictable and possibly difficult to control. A domino effect starting with a nuclear surprise could lead to mass protests and end with a loss of political support for the retention of U.S. NSNFs in Europe.

- Alternatives such as reconstitution or substitution might help to mitigate the damage to NATO's deterrence capabilities that would occur following a unilateral withdrawal of U.S. NSNFs.

- Reassurance schemes might enhance the credibility of the alternative postures above. These schemes could include: increased emphasis on the importance of NATO's nuclear decision-making process, increased Allied participation in U.S. nuclear decision making staffs (e.g., NATO European representation at STRATCOM, the Joint Staff, or the OSD offices that deal with nuclear issues), or Allied participation in the manning of offshore U.S. nuclear delivery systems.

- Thinking about how NATO might deal with the consequences of a unilateral withdrawal is a more sensible approach than simply hoping a unilateral withdrawal will not occur.

A West European Nuclear Identity: Scenario #3

- A potential WNI would encounter the fewest obstacles if created within NATO, instead of exclusively within an EU or WEU forum.

- Two points are essential in assessing the credibility of a WNI's nuclear deterrence posture:

    - Based on analysis of the effectiveness of the asymmetric—but nonetheless stable—deterrent relationship between the Russian Federation and the People's Republic of China, the quantity of weapons available to a WNI should be capable of similarly deterring Russia. (Whereas Russia has an approximately 30:1 advantage over China in nuclear systems, it would have only a 15:1 advantage over a WNI.)

- The real challenge for a WNI would be to unambiguously demonstrate the willingness to use that force.

- Any Alliance member that is not convinced that its security is adequately assured by a WNI would strongly consider acquiring its own nuclear weapons, notwithstanding any prior international agreements. Due to the premium they attach to current U.S. nuclear commitments, this especially applies to Germany and Turkey.

An Air-Delivered Nuclear Forces (ANF) Regime: Scenario #4

- U.S. arms control efforts suffer from a deep-seated bias oriented toward concentrating on strategic, counter-force systems—those with the most effective security arrangements. Efforts to address dangerous and destabilizing air-delivered weapons and warheads through negotiated arms control regimes have been persistently neglected, except for the SALT and START restrictions on strategic bombers and associated nuclear *delivery* means.

- Although unprecedented and revolutionary, the proposed ANF regime would be verifiable and practicable. It would use arms control measures to increase security, transparency, and confidence in the Eurasian area.

- The ANF regime would not be pursued in order to offer Russia an incentive to accept NATO enlargement. The implementation formula would be "separate but parallel."

- The ANF regime could
  - increase NATO's security
  - raise the nuclear threshold
  - counter Russian interests in a nuclear warfighting doctrine
  - promote a process of verified and monitored nuclear warhead reduction and elimination.
  - ensure that the remaining fissile material is not recycled into further weapons production.

C. POLICY IMPLICATIONS

As discussed above, the United States and its NATO Allies are on the verge of major new policy debates regarding nuclear weapons issues in Europe. If the eventual result of these debates involves a withdrawal of the remaining U.S. nuclear weapons from Europe, vigorous Alliance deliberations with active U.S. participation would improve the chance that such a withdrawal

would occur in a manner consistent with Alliance interests. As the Eurasian environment evolves, a withdrawal of the remaining U.S. nuclear weapons in Europe cannot be excluded.

Regardless of the future direction that policy makers choose, the current NATO nuclear posture is not indefinitely sustainable. The nuclear calculus in the European security equation is changing, and NATO decision makers must prepare to meet these changes "head-on." New nuclear debates appear imminent. Alliance members should therefore pursue a focused effort to establish an internal NATO consensus and to educate the public—prior to the enlargement debate or any other nuclear-related initiatives. In this manner, the Alliance will define the future of its weapons posture based on its own security requirements, not on reactions to moves made by other actors seeking to capitalize on the reluctance of many allied officials to address nuclear issues publicly.

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